Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

RECEIVED
SEP 27 1990
DIVISION OF OIL, GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.	U-46825
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	N/A
7. UNIT AGREEMENT NAME	N/A
8. FARM OR LEASE NAME	Mantel Federal
9. WELL NO.	23-1
10. FIELD AND POOL, OR WILDCAT	Deadman Canyon 365
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	23-37s-23e SLBM
12. COUNTY OR PARISH	San Juan
13. STATE	Ut.

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [X]

2. NAME OF OPERATOR: Celsius Energy Company (307) 382-9791

3. ADDRESS OF OPERATOR: P.O. Box 458, Rock Springs, Wy. 82902

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2488' FNL & 2098' FWL (SENW)
At proposed prod. zone: 2430' FNL & 2350' FWL (SENW)

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 7 air miles SE of Blanding, Ut.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	152'-210'	16. NO. OF ACRES IN LEASE	1,600 AKAH
17. NO. OF ACRES ASSIGNED TO THIS WELL	40		
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	>6,000'	19. PROPOSED DEPTH	6,380' (TVD)
20. ROTARY OR CABLE TOOLS	Rotary		
21. ELEVATIONS (Show whether DF, RT, GR, etc.)	5,777' graded ground	22. APPROX. DATE WORK WILL START*	Oct. 15, 1990

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
20"	17-1/2"	Conductor Pipe	35'	1.5 cu yd or to surface
12-1/4"	8-5/8"	24# (K-55)	2,200'	≈1816 cu ft or to surface
7-7/8"	4-1/2"	11.6#(K-55)	6,380'	≈595 cu ft or to 4,200'

R615-3-3

1. Federal lease is N2 Sec. 23, T. 37 S., R. 23 E., et al, San Juan County, Utah.
2. Request exception to Rule ~~302~~ because of geology and archaeology. Exception is to quarter-quarter and lease line (Celsius has lease to south, not to another well (closest is at least 1,060' away').
   a) Orthodox well could be drilled at 1980 FN & 1980 FW, but could be a dry hole since it would be off trend. Well is staked on a specific shot point (#253 on line MAR-H14).
   b) Request permission to drill at 2430' FNL & 2350' FWL 23-37s-23e, San Juan County, Utah.
   c) One existing well (Celsius Wood-Cox 23-33) offsets the proposed exception. Seven potential wells could offset the proposed location and all would be on Celsius leases.
   d & e) Celsius is lessee or operator of all lands and drilling units in a minimum 2,350' radius.

See PAGE 6 for directional drilling details.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED _____ TITLE Drilling Superintendent DATE Sept 26 1990

(This space for Federal or State office use)

PERMIT NO. 43-037-31504 APPROVAL DATE _____

cc: MDO (3), SJRA (2), UDOGM (2), Wood

APPROVED BY _____ TITLE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 10/8/90
BY: [signature]
WELL SPACING: R615-3-3

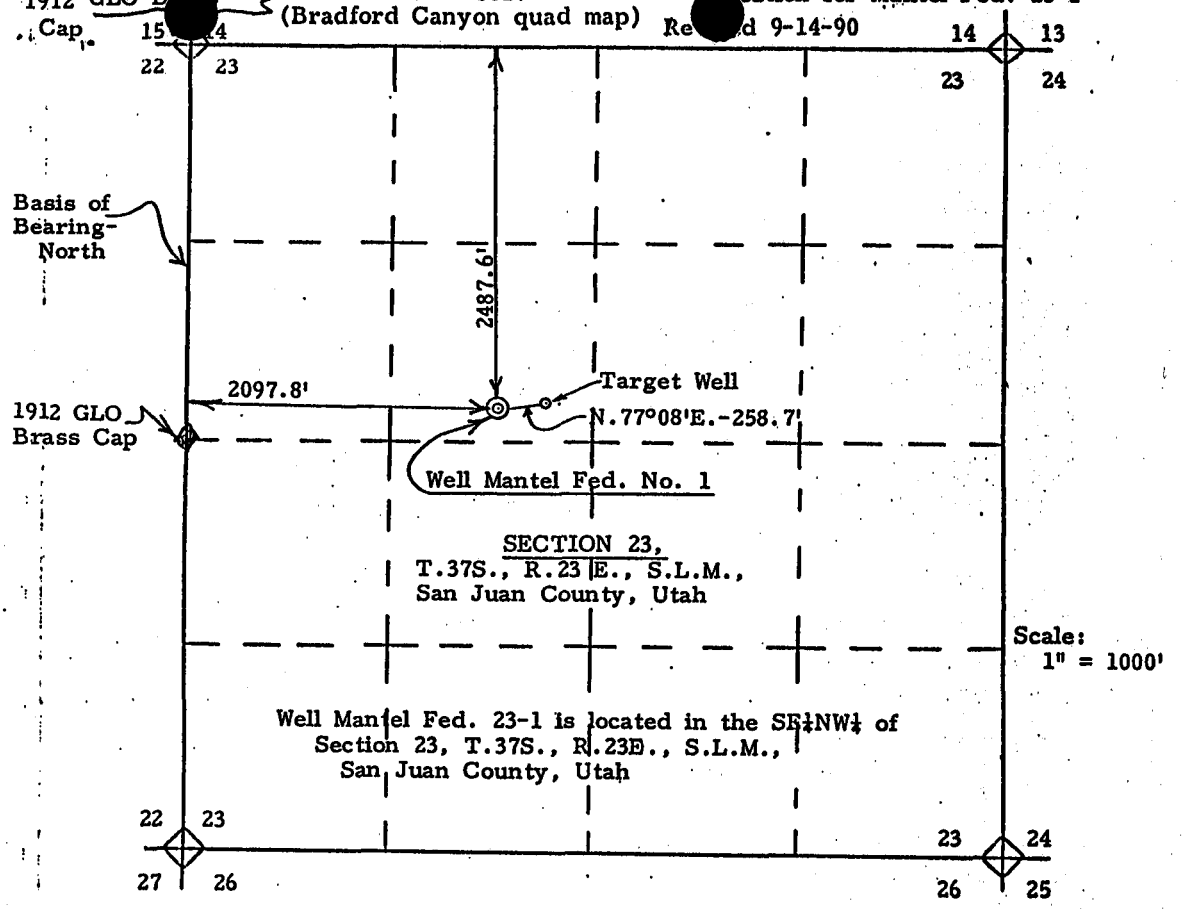
OIL AND GAS

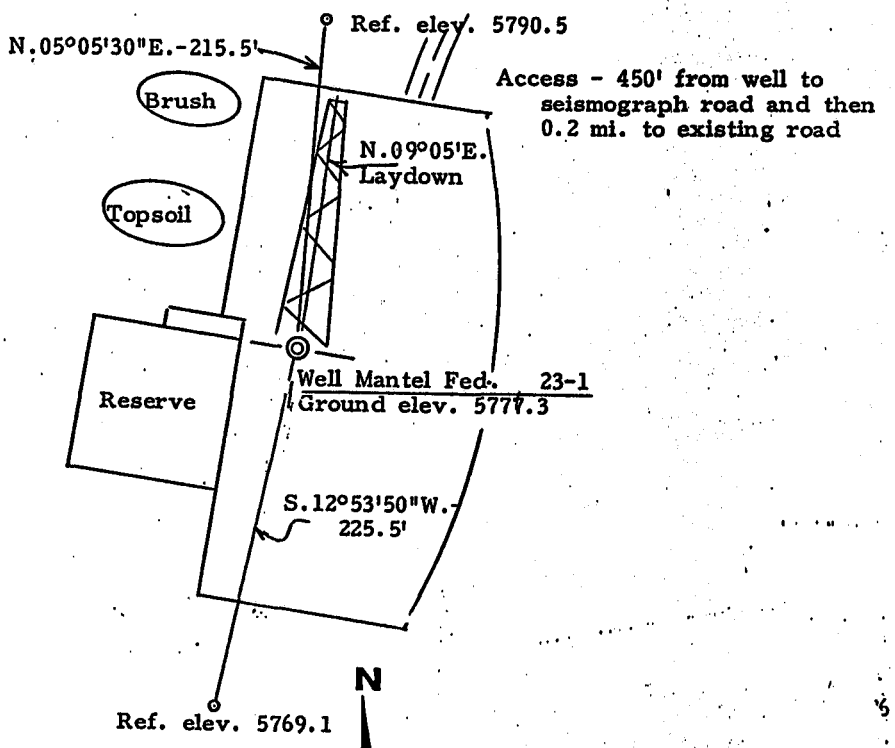
*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Sheet 1 of 3 — Celsius Energy — Sept. 11, 1990

1912 GLO B[illegible] Cap — Elev. datum - 5817 (Bradford Canyon quad map) — [illegible]cation for Mantel Fed. 23-1 — Re[illegible]d 9-14-90





KNOW ALL MEN BY THESE PRESENTS:
THAT I, FREDRIC P. THOMAS
do hereby certify that I prepared this plat from an actual and accurate survey of the land and that the same is true and correct to the best of my knowledge and belief.

Fredric P Thomas

FREDRIC P THOMAS
Reg. L.S. and P.E.
Colo. Reg. No. 6728

Bearing by Solar observation

Utah Reg. No. 4346

REGISTERED LAND SURVEYOR
FREDRIC P. THOMAS
4346
STATE OF UTAH

THOMAS Engineering Inc.
215 N. Linden
Cortez, Colorado
565-4496

Celsius Energy Company's Mantel Federal 23-1
2488' FNL & 2098' FWL (Surface)
2430' FNL & 2350' FWL (BHL)
Sec. 23, T. 37 S., R. 23 E.
San Juan County, Ut.

All lease operations will fully comply with applicable laws, regulations (43 CFR 3100), Onshore Oil & Gas Orders, and approved operations plan. Celsius is fully responsible for the actions of its subcontractors and will furnish a copy of these conditions to its field representative to assure compliance.

Drilling Program

1. FORMATION TOPS

Estimated tops of important geologic markers are:

Formation Name	True Vertical Depth*	KB Depth*	Subsea Depth*
Dakota Ss	000'	000'	+5,777'
Morrison Ss & Shale	100'	113'	+5,677'
Entrada Ss	1,025'	1,038'	+4,752'
Navajo Ss	1,230'	1,243'	+4,547'
Chinle Shale	2,160'	2,173'	+3,617'
Shinarump	2,850'	2,863'	+2,927'
Cutler Ss & Shale	3,005'	3,018'	+2,772'
Honaker Trail	4,775'	4,788'	+1,002'
Paradox	5,405'	5,418'	+ 372'
Ismay	6,005'	6,018'	- 228'
Hovenweep	6,125'	6,138'	- 348'
Lower Ismay	6,170'	6,183'	- 393'
Gothic	6,220'	6,233'	- 443'
Desert Creek	6,250'	6,263'	- 473'
Desert Creek Porosity	6,310'	6,323'	- 533'
Chimney Rock Shale	6,325'	6,338'	- 548'
Akah Shale	6,345'	6,358'	- 568'
Salt	6,375'	6,388'	- 598'
Total Depth (TD)	6,380'	6,393'	- 603'

*All elevations based on an ungraded ground elevation of 5,777'

2. NOTABLE ZONES

Estimated true vertical depths from a GL of 5,777' at which water, oil, gas, or other mineral bearing zones are expected to be encountered are:

Possible Oil & Gas Zones
Ismay: 6,005'
Lower Ismay: 6,170'
Desert Creek Porosity: 6,310'

Possible Coal Zones
Dakota: 000'
Morrison: 100'
Shinarump: 2,850'

Possible Water Zones
Morrison: 100'
Entrada: 1,025'
Navajo: 1,230'

Possible Uranium Zones
Morrison: 100'
Chinle: 2,160'

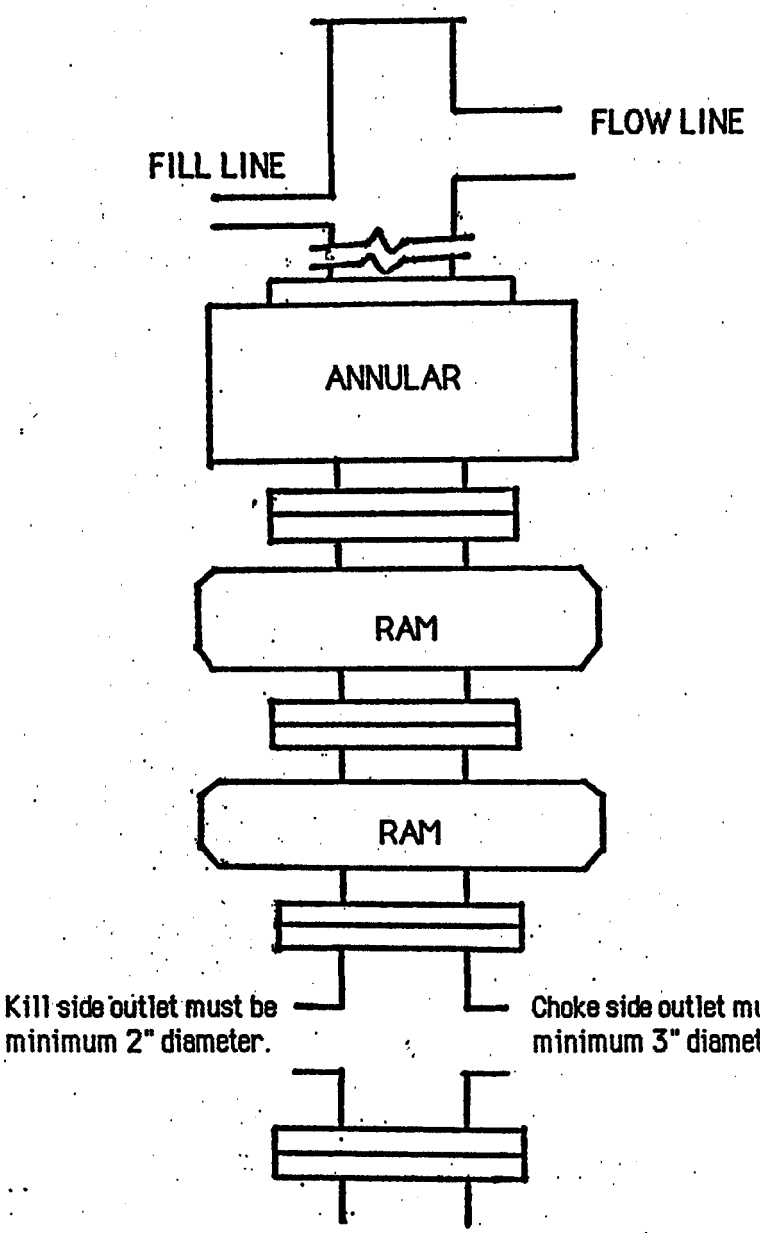
Surface and production casing will be set to protect water, oil, gas, or other mineral bearing zones. Well will be drilled with weighted mud. All fresh water found while drilling will be recorded by depth, cased, and cemented. Surface casing will be cemented to surface. Production casing will be cemented from TD to ≈4,200'

Oil and gas shows will be tested and evaluated for commercial potential as determined by company geologist. Primary goal is the Ismay. Secondary goals are the Lower Ismay and Desert Creek Porosity.

3. PRESSURE CONTROL (See PAGES 3-5)

The drilling contract has not yet been awarded, thus the exact type of BOP to be used is not now known. A schematic diagram of a typical 3000 psi BOP is on PAGE 3. BOP specifications include 8-5/8", 8rd x 11", 3000 psi casing head flange; 11" 3000 psi dual gate BOP (blind rams on top, 4-1/2" pipe rams below); and 11" 3000 psi annular preventer.

2488' FNL & 2098' FWL (Surface)
2430' FNL & 2350' FWL (BHL)
Sec. 23, T. 37 S., R. 23 E.
San Juan County, Ut.



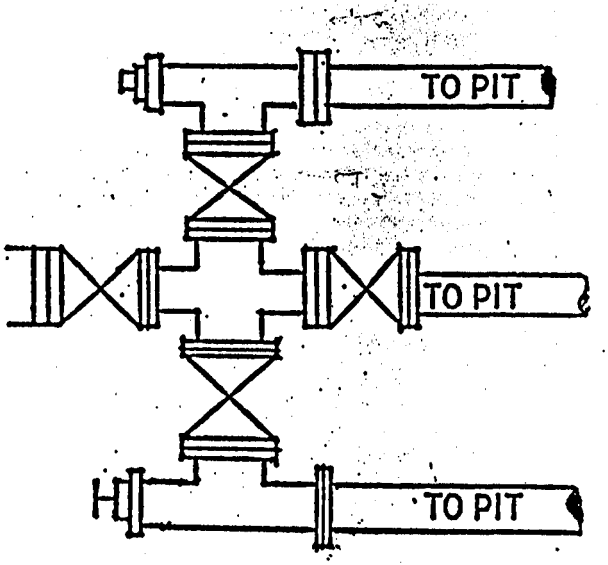
Kill side outlet must be minimum 2" diameter.

Choke side outlet must be minimum 3" diameter.

Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

TYPICAL BOP STACK
& CHOKE MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.



Upper kelly cock will have handle available.
Safety valve and subs will fit all drill string connections in use.
All BOPE connections subjected to well pressure will be flanged, welded, or clamped.

PERMITS WEST, INC.
PROVIDING PERMITS for the ENERGY INDUSTRY

WOC 6 hours before installing wellhead and BOP. Pressure test BOP and ancillary equipment to ≈3000 psi, 8-5/8" casing to ≈2065 psi, and annular preventer to ≈1500 psi.

4. CASING & CEMENTING

Hole Size	O.D.	Weight(lb/ft)	Grade	Type	Age	Measured Depth (GL)
20"	17-1/2"		Conductor Pipe		New	0' - 35'
12-1/4"	8-5/8"	24	K-55	ST&C	New	0' - 2,200'
7-7/8"	4-1/2"	11.6	K-55	LT&C	New	0' - 6,380'

Conductor Pipe (0' - 35') will be cemented to surface with 1.5 cu. yd.

Surface casing (0' - 2,200') will be cemented to surface as follows:
a) Guide shoe
b) One shoe joint
c) Insert float valve
d) 9 centralizers (shoe joint + next 6 collars + 2 collars near surface)
e) Lock bottom 2 joints and float equipment with thread lock compund. Reciprocate casing 20' during cementing. Land casing so that casing head flange will be at ground level.

Surface casing will be cemented as follows:
a) Circulate bottoms up
b) Pump ≈10 bbl fresh water
c) Lead slurry will be 65/35 Pozimx + 6% gel + 2% calcium chloride (+ 1/4 lb/sk Cello-flake if circulation lost while drilling - most likely in Navajo). Slurry weight = 13.1 ppg. Yield = 1.69 cu ft/sk. Volume = 1816 cu ft based on 100% excess (908 cu ft for annulus + 908 cu ft excess).
d) Use top and bottom wiper plugs and displace with water.
e) Have ≈200 sx Class G cement, 3 joints 1" line pipe, and calcium chloride to mix 3% by volume to top off annulus if cement drops from surface

Production casing (0' - 6,380') will be run as follows:
a) Differential fill shoe
b) One shoe joint
c) Differential fill collar
d) Centralizers on shoe joint and on each collar from TD to top of Ismay (total of 25 centralizers)
e) Lock shoe joint and float equipment with thread locking compound

Production casing will be cemented from TD to ≈4,200' as follows:
a) Reciprocate casing ≈20' during cementing
b) Circulate bottoms up
c) Mix bactericide and oxygen scavenger with mud which will remain behind pipe after cementing
d) Pump ≈40 bbl water
e) Cement with Class G slurry with retarder for 3 hr pumpability at 130° F + fluid loss additive for ≤100 cc API water loss + friction reducer for turbulent flow at 5 bbl/min; at a slurry weight of 15.8 ppg, yield of 1.15 cu ft/sk, and minimum volume of ≈595 cu ft (≈495 sx). Actual volume will be calculated from caliper log + 20% excess.
f) Land casing with full weight on slips

5. MUD PROGRAM

Depth	Type	#/Gal	sec/qt	F.L.(cc)	Solids	Filter Cake
0' - 2,200'	Fresh water mud with gel sweeps as needed to clean hole					
2,200' - TD	Fr. water	9.5	32-36	15-20	≥6%	1/32

Mud up after drilling out of surface casing. Minimal weight, viscosity, solids, and water loss control should be maintained. Water loss should be decreased as the Ismay/Desert Creek section is approached (goal is 10 cc). If Desert Creek Porosity is developed, pressures may require more weight. Be prepared for anhydrite and chloride contamination in Ismay and below.

6. CORING, TESTING, & LOGGING

No cores are planned. Two DSTs may be run during drilling breaks in the Ismay. Rig crew will catch samples every 30' from bottom of surface casing to 4,700'. Two man mud logging unit will be on site to catch samples from 4,700' to TD. Logs will be run in the following order:

DIL-SFL-GR: TD to ≥4,700'
BHC Sonic-GR: TD to surface casing in combination with DIL
FDC-CNL-GR: TD to ≥4,700'

Whether the well is completed as a dry hole or producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations *per* 43 CFR 3162.4-1(b). Two copies of all logs, core descriptions & analyses, test data, geologic summaries, sample descriptions, and all other data obtained during drilling, workover, and/or completion operations, will be filed with Form 3160-4. (If requested, sample cuttings, fluids, and/or gases will be submitted to the District Manager.)

7. DOWNHOLE CONDITIONS

The maximum expected bottom hole pressure is ≈2,500 psi. No abnormal pressures, temperatures, or hydrogen sulfide are expected.

Well will be directional drilled because of archaeology. Displacement from surface to bottomhole location is 259' bearing N 77° 08' E. Drill with standard rotary assemblies to 4400', taking Totco surveys at regular intervals. On dull bit closest to 4400', run mutishot survey. From this survey directional correction will be designed if needed. Correction run will be made with mud motor assembly and steering tool. From there to TD, a fully stabilized assembly will be used to maintain angle and direction.

8. MISCELLANEOUS

Anticipated spud date is October 15, 1990. It is expected it will take ≈3 weeks to drill the well and ≈10 days to complete the well. Completion will include perforating and acidizing. Call BLM during logging for plugging procedure. Follow procedure if well is to be plugged.

Spud date will be phoned to the Resource Area, a minimum of 24 hours before spudding. A Sundry Notice (Form 3160-5) reporting spud date and time will be sent to the District Manager within 24 hours after spudding. If the spud is on a weekend or holiday, Sundry will be sent on the following regular work day.

Starting with the month in which operations begin, and continuing each month until the well is physically P&A, a "Monthly Report of Operations" (Form 3160-6) will be sent to the Minerals Management Service.

Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual events will be promptly reported to the Resource Area *per* NTL-3A.

If the well is successfully completed for production, then the District Manager will be notified. Written notification will be sent not later than 5 business days following the date on which the well is placed on production. The Resource Area may schedule a first production conference within 15 days after receipt of the first production notice.

Approval to vent/flare gas during initial well evaluation will be obtained from the District Manager. This preliminary approval will not exceed 30 days or 50 MMcf of gas. Approval to vent/flare beyond this initial period will require the District Manager's approval *per* NTL-4A.

A Sundry Notice will be sent to the District Manager within 30 days following completion of the well for abandonment. Sundry will note where

plugs were placed and the current status of surface restoration. Final abandonment will not be approved until reclamation has been completed to the satisfaction of BLM.

Once plugged, a 4' high regulation dry hole marker will be installed and the following data beaded on with a welding torch: Celsius Energy Company, Mantel Federal 23-1, SENW 23-37s-23e, U-46825.

13 Point Surface Use Plan

1. EXISTING ROADS & DIRECTIONS (See PAGES 17 &18)

From the Petrolane propane store south of Blanding, go E 1.1 mi. on a paved county road.
Then turn right and go S and W 7.6 mi. on a gravel county road.
Then turn left and go N 0.2 mi. on dirt County Road 286 (Mustang Well).
Then turn right and go E 1.3 mi. on the Woods-Cox 23-33 road.
Then turn left and go N for 0.3 mi. to a big berm on the left.
Continue N over the berm for another 0.2 mi. along a seismic trail.
Then turn left and go W ≈150 yards along a flagged route to the well.

An encroachment permit has been approved by the county road department. Only the Woods-Cox 23-33 road needs maintenance. A grader will blade out ruts and holes.

This APD is also serving to amend BLM road right-of-way U-50164. Amendment covers S2SW4 & NESW 23-37s-23e, San Juan County, Ut. Length of amendment is 0.5 mi. and width is 20' (16' wide travel surface).

2. ROADS TO BE UPGRADED AND BUILT (See PAGE 17)

Notify BLM in Monticello 48 hours before construction starts.

Two archaeological sites which parallel the road will be protected before construction starts. The first site is on the east side of the road and starts ≈125' north of the big berm. It continues north for ≈215'. The second archaeological site is on the west side of the road and starts ≈625' north of the big berm and continues north for ≈150'. Both are marked by blue flags. Both will be protected by stringing a single strand

of wire for 215' and 150' respectively. Flags will be hung on the wire for safety.

The final 0.25 mi. of road will require construction, of which only the final 150 yards will be totally new construction. The road will be flatbladed with a 16' wide running surface, and 20' maximum disturbed width. Topsoil will be windrowed by the road. Maximum grade will be 7%. Maximum cut or fill will be 3'. There will be no culverts, turnouts, or fence crossings. If production results, then the road will be upgraded to Class 3 standards within a 35' wide corridor (still 16' surface).

Surface use and vehicle travel will be limited to the approved location and road. Any additional area will be approved by BLM in advance.

3. EXISTING WELLS (See PAGE 18)

There are 3 oil and gas wells (Celsius Wood-Cox 23-33 in NWSE Sec. 23 and Meridian's Cherokee 33-14 and 43-14 wells in Sec. 14) within a mile. There are no water, disposal, or injection wells.

4. PROPOSED PRODUCTION FACILITIES

Type and layout of production facilities are not known now. A Sundry Notice will be submitted before installation. All permanent (on site for 6 or more months) surface facilities will be painted a flat, neutral Juniper green color. Parts required to comply with OSHA colors are excluded.

Tank battery will be surrounded by a dike of sufficient capacity to contain 150% of the storage capacity of the largest tank in the battery. All load lines will be placed inside the dike.

Site security regulations in 43 CFR 3162.7-5 and Onshore Order #3 will be obeyed. Oil and gas measurement will comply with Onshore Orders #4 (43 CFR 3162.7-2) and #5 (43 CFR 3162.7-3).

Gas meter run will be within 500' of the wellhead. Gas flowline will be buried from the wellhead to the meter and downstream for the remainder of the pad. Meters will be housed or fenced.

If at any time facilities located on public land authorized by the terms of the lease are no longer included in the lease, BLM will process a change in authorization to the appropriate statute. Authorization will be subject to appropriate rental or other financial obligation determined by BLM.

5. WATER SUPPLY (See PAGE 17)

Water will be trucked ≈9.7 mi. from Clyde Watkins (801-678-2414) water well in NWSW 1-37s-22e. Dr. Watkins has given his permission. A permit has been filed with the state.

6. CONSTRUCTION METHODS & MATERIALS

A flagged single strand wire fence will be built west of the pad and south of the reserve pit to protect an archaeological site. Trees will be stripped and piled far north of the reserve pit. Topsoil will be stripped and piled just north of the reserve pit.

Pad construction materials are native *in situ* soils on lease. No material will be removed from BLM land without approval. Use of materials under BLM jurisdiction will obey 43 CFR 3610. Reserve pit will be lined with 24 tons of commercial bentonite.

7. WASTE DISPOSAL

Reserve pit will be lined with 24 tons of bentonite. Over half of the capacity will be in cut. It will be fenced on 3 sides with 4 strands of barb wire or woven wire topped with a stand of barb wire within 24 of completion of construction. The 4th side will be fenced within 24 hours of the cessation of drilling operations. The fence will be kept in good repair while the pit is drying. No chrome compounds will be on location.

No trash will be burned. All trash will be placed in a portable trash cage. When full, it will be hauled to the Dolores or Montezuma county landfills or Blanding dump.

Human waste will be disposed of in 20' deep ratholes under camper trailers, chemical toilets, or via a privy on top of the mud tanks. Ratholes will be immediately filled when the trailers are removed.

Produced water will be confined to the reserve pit for a period not to exceed 90 days after initial production. During the 90 day period an NTL-2B application will be submitted for BLM's approval of a permanent disposal method and site. Probable disposal sites are Celsius injection wells or Hay Hot Oil's State of Utah approved evaporation pond near Bluff.

8. ANCILLARY FACILITIES

There will be no formal camp, although 3 camper trailers may be on site for the company man, mud logger, and tool pusher.

9. WELL SITE LAYOUT

See PAGES 19-21 for depictions of the well pad, cross sections, cut and

fill diagrams, reserve pit, trash cage, access road onto the pad, parking, living facilities, soil stockpile, and rig orientation.

10. RECLAMATION

Within 24 hours of completion of drilling, all trash and debris will be collected from the pad and surrounding area and placed in the trash cage.

As soon as the reserve pit dries or within 18 months, areas not needed for production will backfilled, recontoured to natural contours, ripped to control erosion, and stockpiled trees and topsoil spread (leaving enough for the pad once the well is plugged). Remaining topsoil will be seeded in place. If the well is plugged, then the entire wellsite and 0.25 mi. of new road will be reclaimed in the same manner. Area will be harrowed and seed broadcast between October 1 and February 28 with the following pure live seed mix:

5 lb/ac crested wheatgrass
4 lb/ac fourwing saltbush
2 lb/ac desert bitterbrush
1 lb/ac yellow sweet clover
2 lb/ac forage kochia
3 lb/ac bottlebrush squirreltail
5 lb/ac Russian wildrye

If area is drilled, then rates can be reduced by 25% and harrow omitted.

11. SURFACE OWNER

Surface owner of the well and all road construction or upgrading is the U.S Government as administered by BLM.

12. OTHER INFORMATION

There is a clinic in Blanding. Closest hospital is a ≈45 minute drive away in northwest Monticello (801-587-2116) on 364 West 1st North.

The dirt contractor will be provided with an approved copy of the surface use plan. Well will be identified from rig-up on *per* 43 CFR 3162.6.

Celsius will inform everyone in the area who is associated with the well that they are subject to prosecution for knowingly disturbing historic or archaeology sites or for collecting artifacts. If historic or archaeological material is uncovered during construction, the operator will immediately stop work that may further disturb such material and call BLM. BLM will inform the operator within 5 working days whether the material appears eligible for the Nat'l. Register of Historic Places, likely mitigation the operator must do before the site can be used if in-situ preservation is not necessary, and a timeframe for BLM to complete an expedited review under 36 CFR 800.11 to confirm through the SHPO that BLM's findings are correct and mitigation is appropriate.

If Celsius wants at any time to relocate activities to avoid the expense or delay of mitigation, BLM will be responsible for recording or stabilizing exposed material. Otherwise, the operator is responsible for mitigation costs. BLM will provide technical and procedural mitigation guidelines. Once BLM verifies mitigation has been completed, the operator will then be allowed to resume construction.

There will be no change from the proposed drilling and/or workover plan without prior approval from the District Manager. A Sundry Notice will be filed for approval for all changes of plans and other operations *per* 43 CFR 3162.6.

This permit will be valid for one year from the date of approval. After it

expires, a new application will be filed for approval of future operations.

BLM District Office mailing address is P.O. Box 970, Moab, Utah 84532.
Phone number is (801) 259-6111.
BLM Resource Area mailing address is P.O. Box 7, Monticello, Utah 84535.
Phone number is (801) 587-2141.

13. REPRESENTATION AND CERTIFICATIONS

Anyone having questions concerning the APD should contact either:

Brian Wood
Permits West, Inc.
37 Verano Loop
Santa Fe, NM 87505
(505) 984-8120
FAX (505) 988-9682

or

Cathy Flansburg
Celsius Energy Company
P.O. Box 458
Rock Springs, Wy. 82902
(307) 382-9791

Field representative may be:

R. F. Reiner
Celsius Energy Company
P.O. Box 458
Rock Springs, Wy. 82902
(307) 382-9791

or

Dave Nelson
Celsius Energy Company
Dove Creek, Co.
(303) 677-2223

I hereby certify Celsius Energy Company has the necessary consents from the proper lease and unit interest owners to conduct lease and unit operations in conjunction with this APD. Bond coverage *per* 43 CFR 3104 for lease activities is being provided by Celsius Energy Company.

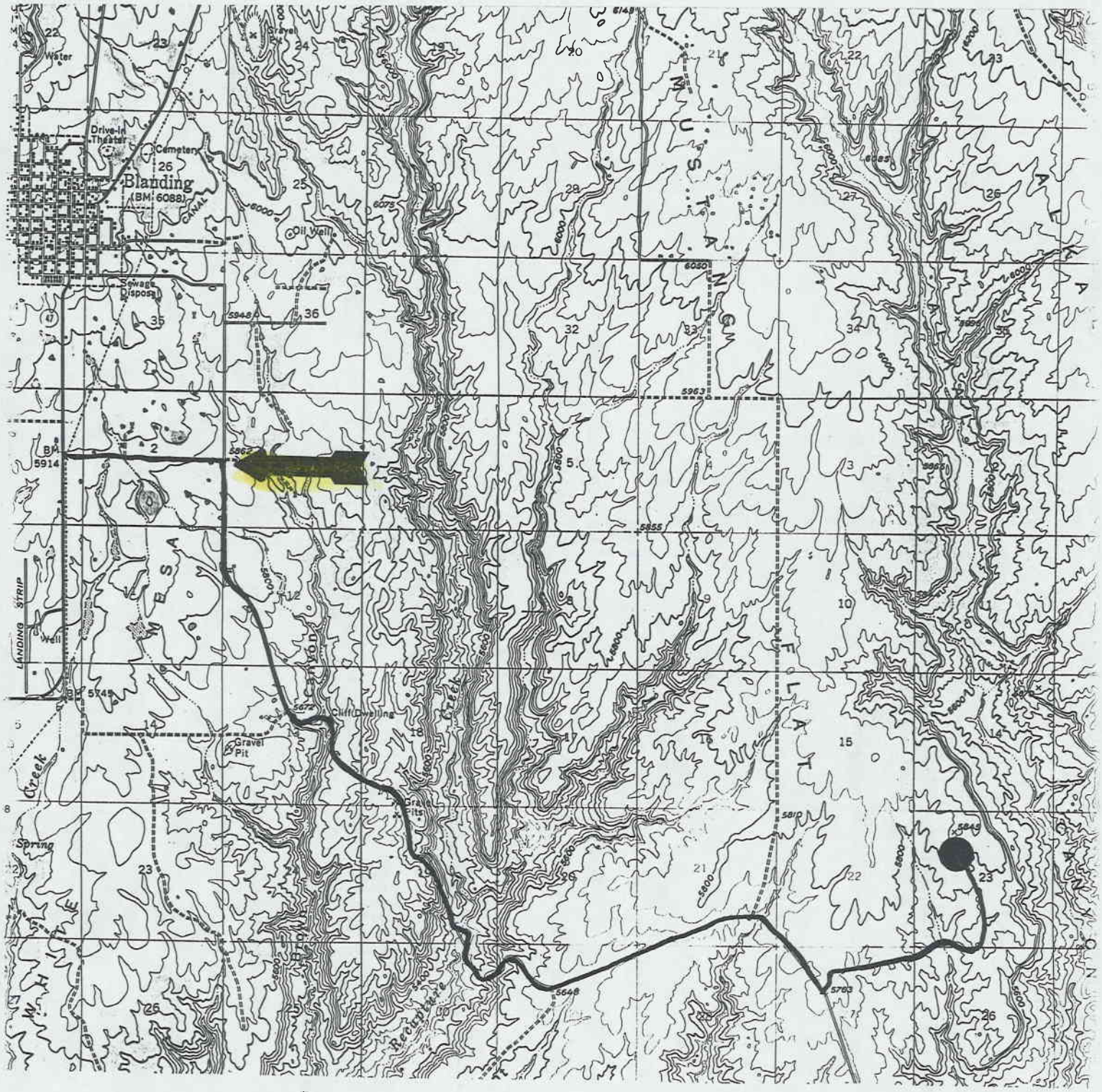
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in

this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Celsius Energy Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

R. F. Reiner, Drilling Superintendent

Date Sept 26 1990

Celsius Energy Company's Mantel Federal 23-1
2488' FNL & 2098' FWL (Surface)
2430' FNL & 2350' FWL (BHL)
Sec. 23, T. 37 S., R. 23 E.
San Juan County, Ut.



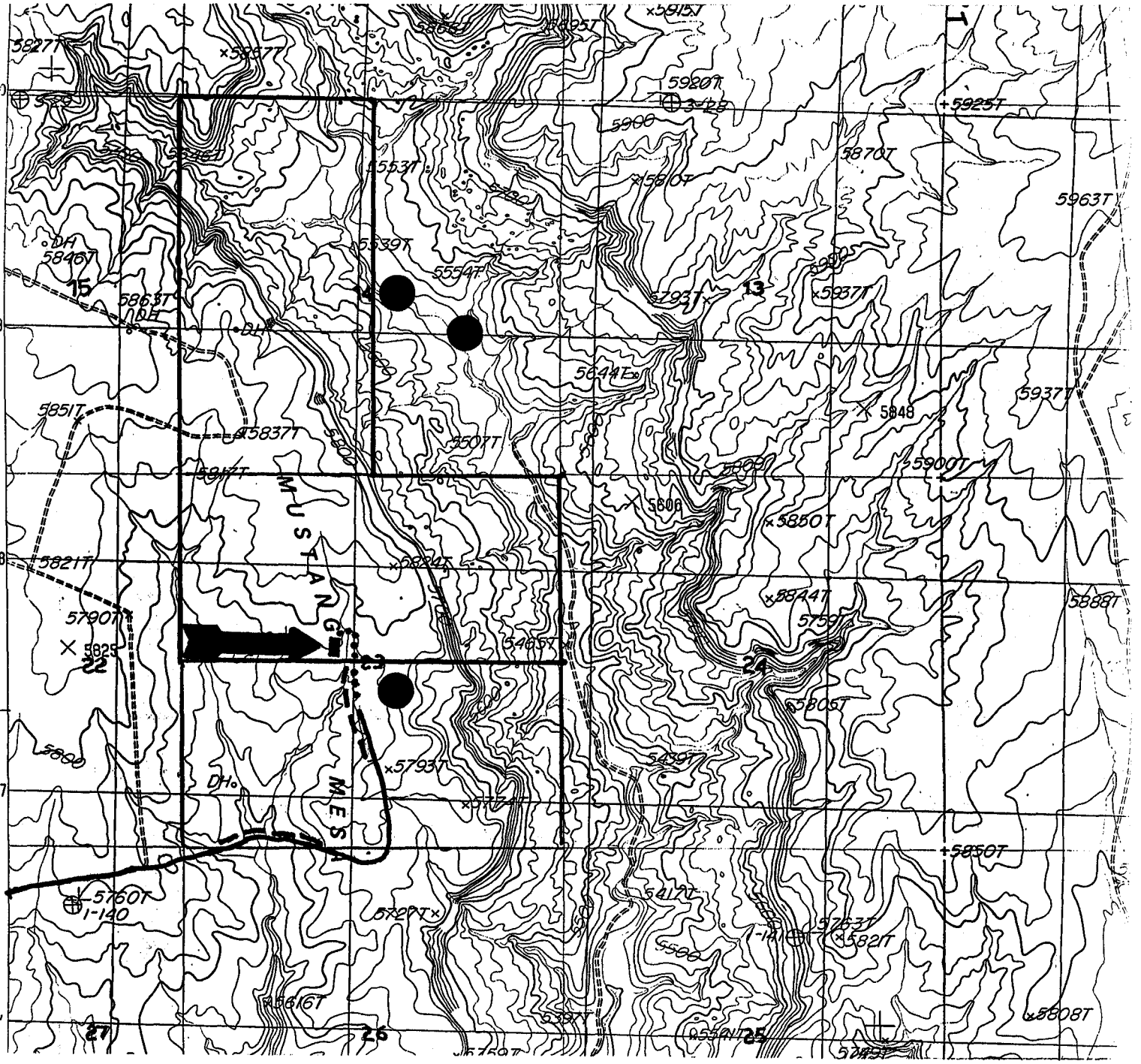
Proposed Well: ●

Water Source: ←

Access Route: ~

PERMITS WEST, INC.
PROVIDING PERMITS for the ENERGY INDUSTRY

Celsius Energy Company's Mantel Federal 23-1
2488' FNL & 2098' FWL (Surface)
2430' FNL & 2350' FWL (BHL)
Sec. 23, T. 37 S., R. 23 E.
San Juan County, Ut.



Proposed Well: ➡

Existing Well: ●

Lease Line: ⌐

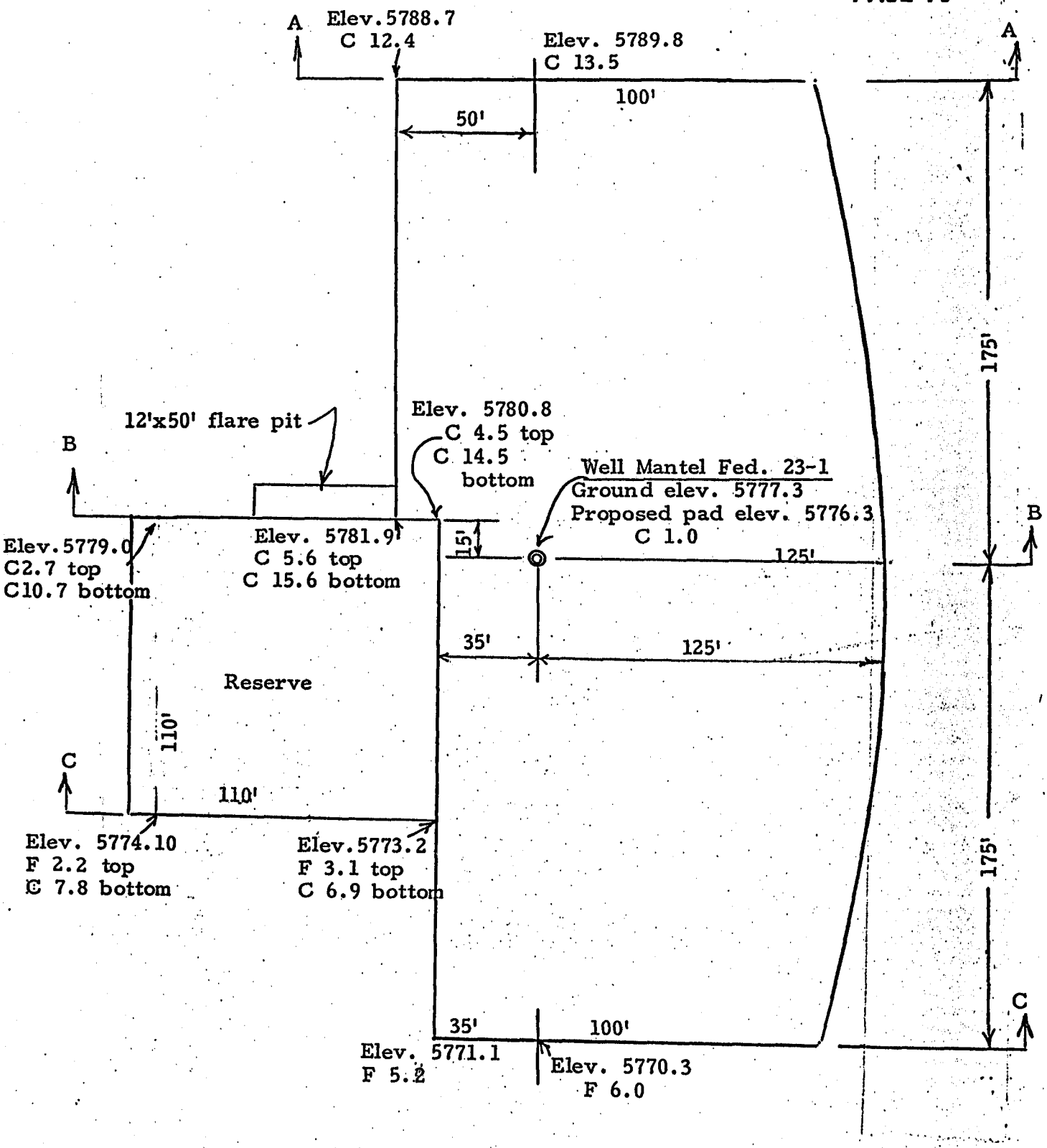
Road Right-of-Way: - - -

Existing Road: ~

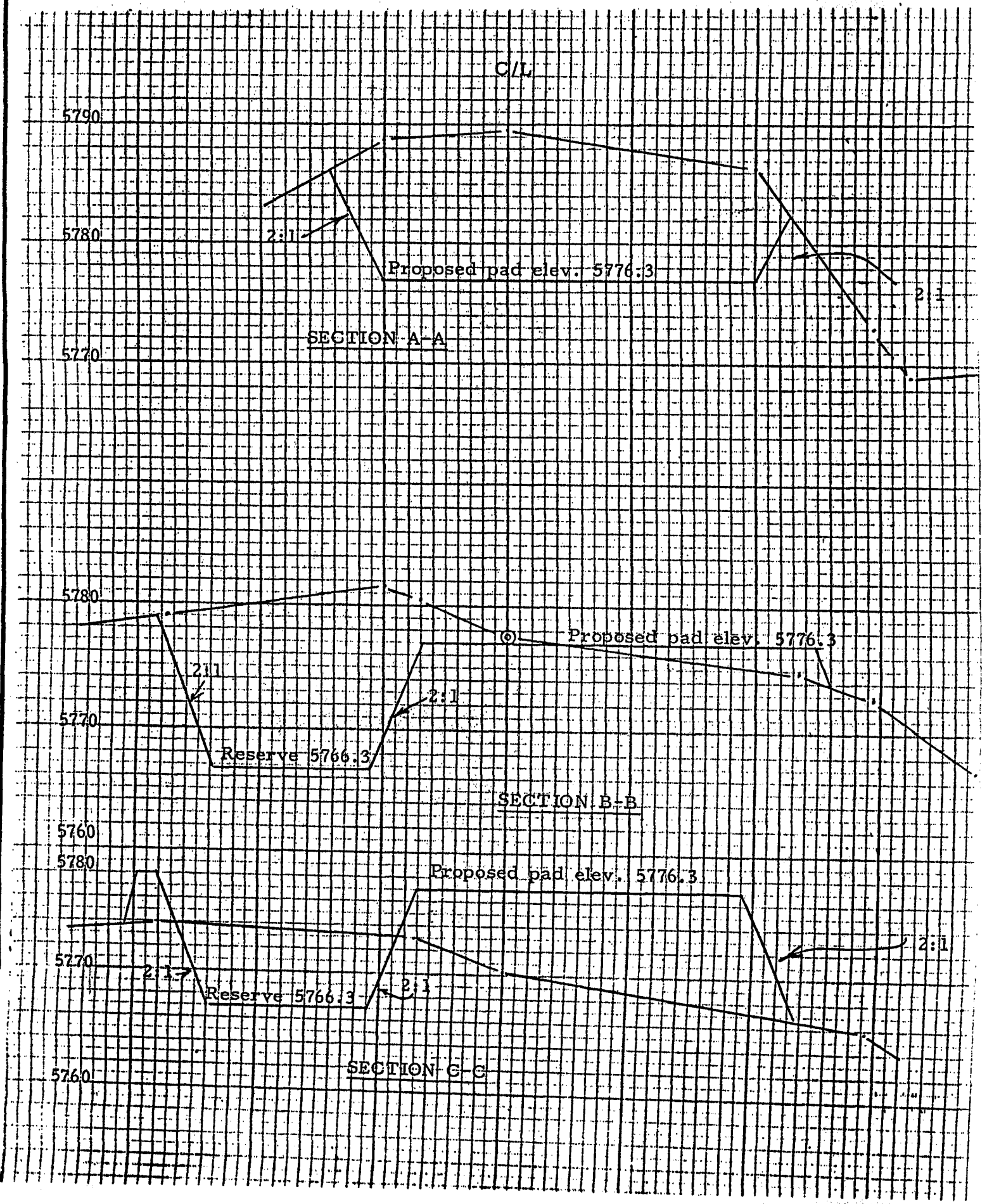
New Road: ·····

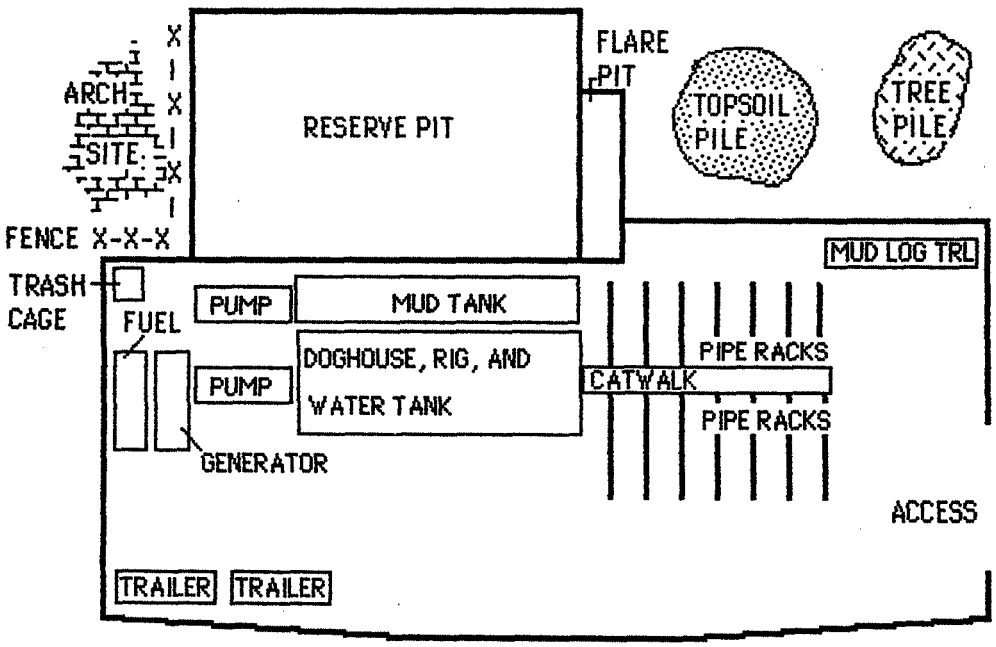
PERMITS WEST, INC.
PROVIDING PERMITS for the ENERGY INDUSTRY

Celsius Energy
Location for Well Mantel Fed. 23-1
Sept. 11, 1990
Revised 9-14-90



Scale: 1" = 50'


C/L
5790
5780
5770
2:1
Proposed pad elev. 5776.3
2:1
SECTION A-A
5780
Proposed pad elev. 5776.3
2:1
2:1
5770
Reserve 5766.3
SECTION B-B
5760
5780
Proposed pad elev. 5776.3
2:1
5770
2:1
Reserve 5766.3
2:1
SECTION C-C
5760


ARCH
SITE
FENCE X-X-X
RESERVE PIT
FLARE PIT
TOPSOIL PILE
TREE PILE
MUD LOG TRL
TRASH CAGE
FUEL
PUMP
MUD TANK
PUMP
DOGHOUSE, RIG, AND WATER TANK
GENERATOR
PIPE RACKS
CATWALK
PIPE RACKS
ACCESS
TRAILER
TRAILER

NORTH

OPERATOR Celsius Energy Co. N-4850 DATE 10-4-90

WELL NAME Martil Federal 23-1

SEC SENW 23 T 37S R 23E COUNTY San Juan

43-037-31564
API NUMBER

Federal (1)
TYPE OF LEASE

CHECK OFF:

- [✓] PLAT
- [✓] BOND
- [✓] NEAREST WELL
- [✓] LEASE
- [✓] FIELD SLBM
- [✓] POTASH OR OIL SHALE

PROCESSING COMMENTS:

~~Water Permit no proof of water permit~~

✓ Exception location 2488' FNL & 2098' FWL (SURFACE)
2430' FNL & 2350' FWL (BHL)

APPROVAL LETTER:

SPACING: [ ] R615-2-3 N/A UNIT [ ] R615-3-2

[ ] N/A CAUSE NO. & DATE [✓] R615-3-3

STIPULATIONS:

~~1- Needs Water Permit~~

0218T

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

October 8, 1990

Celsius Energy Company
P. O. Box 458
Rock Springs, Wyoming 82902

Gentlemen:

Re: Mantel Federal 23-1 - SE NW Sec. 23, T. 37S, R. 23E - San Juan County, Utah
Surf. 2488' FNL, 2098' FWL - BHL. 2430' FNL, 2350' FWL

Approval to drill the referenced well is hereby granted in accordance with Rule R6l5-3-3, Oil and Gas Conservation General Rules.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification within 24 hours after drilling operations commence.

2. Submittal of an Entity Action Form within five working days following spudding and whenever a change in operations or interests necessitates an entity status change.

3. Submittal of the Report of Water Encountered During Drilling, Form 7.

4. Prompt notification if it is necessary to plug and abandon the well. Notify R. J. Firth, Associate Director, (Office) (80l) 538-5340, (Home) 571-6068, or Jim Thompson, Lead Inspector, (Home) 298-93l8.

5. Compliance with the requirements of Rule R6l5-3-20, Gas Flaring or Venting, Oil and Gas Conservation General Rules.

6. Prior to commencement of the proposed drilling operations, plans for facilities for disposal of sanitary wastes at the drill site shall be submitted to the local health department. These drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of General Sanitation, telephone (801) 538-6121.

7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-31564.

Sincerely,

R. J. Firth
Associate Director, Oil & Gas

tas
Enclosures
cc: Bureau of Land Management
J. L. Thompson
we14/1-4

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: U-46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

1a. TYPE OF WORK: DRILL ☑ DEEPEN ☐ PLUG BACK ☐

7. UNIT AGREEMENT NAME: N/A

b. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER — SINGLE ZONE ☐ MULTIPLE ZONE ☑

8. FARM OR LEASE NAME: Mantel Federal

2. NAME OF OPERATOR: Celsius Energy Company (307) 382-9791

9. WELL NO.: 23-1

3. ADDRESS OF OPERATOR: P.O. Box 458, Rock Springs, Wy. 82902

10. FIELD AND POOL, OR WILDCAT: Deadman Canyon

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements:*)
At surface: 2488' FNL & 2098' FWL (SENW)
At proposed prod. zone: 2430' FNL & 2350' FWL (SENW)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 23-37s-23e SLBM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 7 air miles SE of Blanding, Ut.

12. COUNTY OR PARISH: San Juan | 13. STATE: Ut.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
152'-210'	1,600	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
>6,000'	6,380' (TVD)	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 5,777' graded ground

22. APPROX. DATE WORK WILL START*: Oct. 15, 1990

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

43-037-31564 DRL

RECEIVED
NOV 16 1990
DIVISION OF
OIL, GAS & MINING

See PAGE 6 for directional drilling details.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED [signature] TITLE Drilling Superintendent DATE Oct 26 1990

(This space for Federal or State office use)

cc: MDO (3), SJRA (2), UDOGM (2), Wood

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY /s/ William C. Stringer TITLE Assistant District Manager for Minerals DATE NOV 15 1990

CONDITIONS OF APPROVAL, IF ANY:

VENTING OR FLARING OF GAS IS SUBJECT TO NTL 4-A Conditions Effective 1/1/80

CONDITIONS OF APPROVAL ATTACHED

SUBJECT TO RIGHT OF WAY APPROVAL

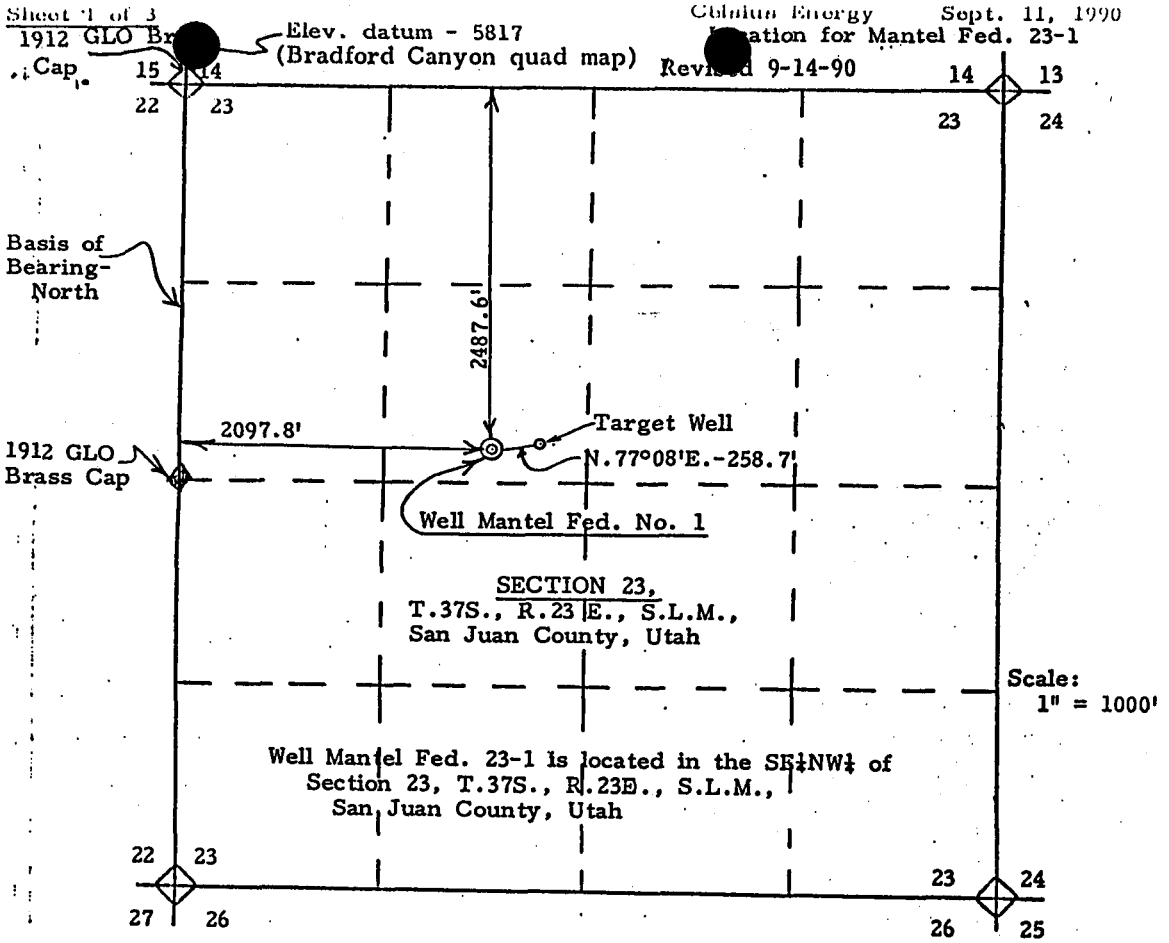
*See Instructions On Reverse Side

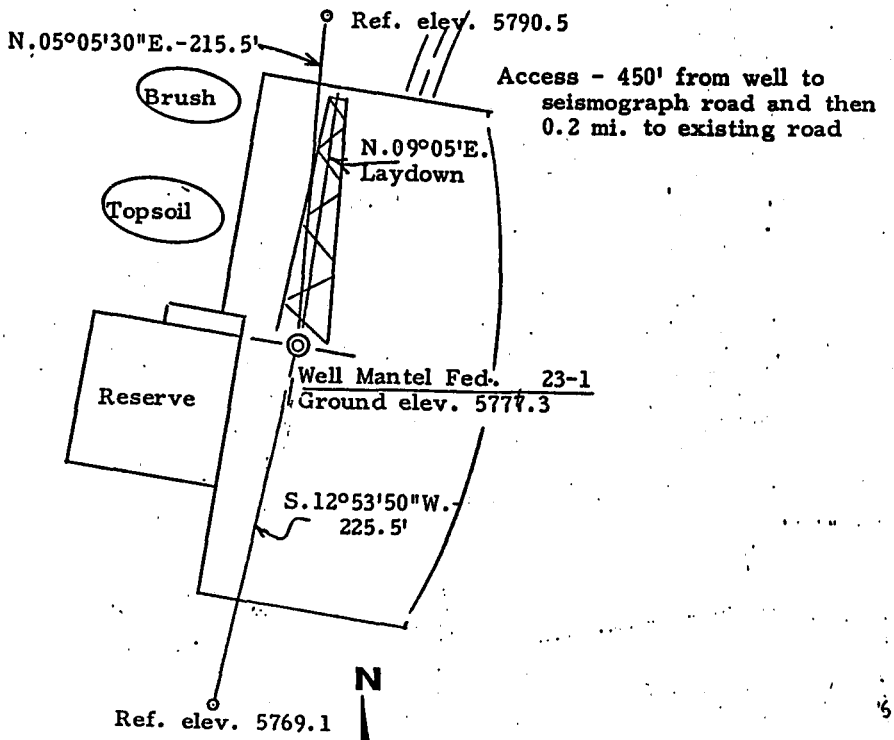
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Dcgm

Sheet 1 of 3 — Coastal Energy — Sept. 11, 1990

1912 GLO Br Cap — Elev. datum - 5817 (Bradford Canyon quad map) — Revised 9-14-90 — Location for Mantel Fed. 23-1





Access - 450' from well to seismograph road and then 0.2 mi. to existing road

KNOW ALL MEN BY THESE PRESENTS:
THAT I, FREDRIC P. THOMAS
do hereby certify that I prepared this plat from an actual and accurate survey of the land and that the same is true and correct to the best of my knowledge and belief.

Fredric P Thomas

FREDRIC P THOMAS
Reg. L.S. and P.E.
Colo. Reg. No. 6728

Bearing by Solar observation

Utah Reg. No. 4346

REGISTERED LAND SURVEYOR
FREDRIC P. THOMAS
4346
STATE OF UTAH

THOMAS Engineering Inc.
215 N. Linden
Cortez, Colorado
565-4496

Celsius Energy Company
Well No. Mantel Federal 23-1
SENW Sec. 23, T. 37 S., R. 23 E.
San Juan County, Utah
Lease U-46825

CONDITIONS OF APPROVAL

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Be advised that Celsius Energy Company is considered to be the operator of the above well and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands.

Bond coverage for this well is provided by ES0019 (Principal - Questar Corporation, CoPrincipal - Celsius Energy Company) via surety consent as provided for in 43 CFR 3104.3.

This office will hold the aforementioned operator and bond liable until the provisions of 43 CFR 3106.7-2 continuing responsibility are met.

A. DRILLING PROGRAM

All lease operations will be conducted in full compliance with applicable regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, Onshore Oil and Gas Order No. 2 and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions and the approved plan will be made available to the field representative to insure compliance.

1. If unconsolidated rock is encountered, conductor shall be set ten (10) feet unto underlying bedrock with cement circulated to surface.

2. Surface casing will be set at least 50 feet into the Chinle Formation regardless of the depth the Chinle is encountered.

Required verbal notifications are summarized in Table 1, attached. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the District Office within twenty-four (24) hours after spudding. If the spudding occurs on a weekend or holiday the written report will be submitted on the following regular work day.

If a replacement rig is needed for completion operations, a Sundry Notice (Form 3160-5) to that effect will be filed for prior approval from the District Office, and all conditions of this approved plan are applicable during all operations conducted with the replacement rig. In emergency situations, verbal approval to bring on a replacement rig will be approved through the District Office.

All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the Assistant District Manager.

All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

The oil and gas measurement facilities will be installed on the well location. The oil and gas meters will be calibrated in place prior to any deliveries. Test for meter accuracy will be conducted monthly for the first three(3) months on new meter installations and at least quarterly thereafter. The Area Manager will be provided with a date and time for the intitial meter calibration and all future meter-proving schedules. A copy of the meter calibration reports will be submitted to the Resource Area Office. All meter measurement facilities will conform with the API standards for liquid hydrocarbons and the AGA standard for nautral gas measurement.

B. Stipulations

1. There will be a diversion of water from the northwest corner of the location to the southwest for a distance of about 300 feet.

2. Upon rehabilitation of the location the trees will be scattered evenly over the site.

3. Ripping, water bars, scarifying or other water control measures may be required by the Authorized Officer at the time of rehibilitation.

The following stipulations were proposed by Celsius in their APD.

1. All operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100, Onshore Oil and Gas Orders, and the approved plan of operations (Application for Permit to Drill).

2. Approximately 450 feet of new road, 16 feet of flat bladed width will be constructed. The topsoil from the access road will be reserved it place. The access road will be rehabilitated or brought to BLM Resource (Class III) Road Standards within sixty (60) days of completion of drilling operations.

3. The reserve pit will be constructed with at least 1/2 of the capacity in cut material. The pit will be lined with 24 tons of bentonite. Three sides of the reserve pit will be fenced within 24 hours after completion of construction and the fourth side within 24 hours after drilling operations cease with four (4) strand of barbed wire, or woven wire topped with barbed wire to a height of not less than four (4) feet. Produced water will be confined to the reserve pit for a period not to exceed 90 days after initial production. During the 90 day period an NTL-2B application will be submitted for BLM's approval of a permanent disposall method and site.

4. Human waste will be disposed of in 20 foot deep ratholes under camper trailers, chemical toilets, or via a privy on top of the mud tanks. Ratholes will be immediately filled when the trailers are removed.

5. All above ground structures and equipment will be painted with a neutral Juniper green color.

6. Tank battery will be surrounded by a dike of sufficient capacity to contain 150 percent of the storage capacity of the largest tank in the battery. All load lines will be placed inside the dike.

7. Gas meter run will be within 500 feet of the wellhead. Gas flowline will be buried from the wellhead to the meter and downstream for the remainder of the pad. Meters will be housed or fenced.

8. A flagged single strand wire fence will be built west of the pad and south of the reserve pit to protect an archaeological site. Trees will be stripped and piled far north of the reserve pit. As much topsoil as possible from the well pad and reserve pit would be stockpiled just north of the reserve pit.

9. The topsoil from the access roads will be reserved in place.

10. No liquid hydrocarbons (i.e., fuels, lubricants, formation) will be discharged to the reserve pit.

11. No chrome compounds will be on location.

12. All potable water encountered will be reported to BLM, stating amounts and depths.

13. All trash will be placed in a trash basket and hauled to a county refuse facility as necessary. There will be no burning of trash on the location.

14. Plans for restoration of the surface:

    A. Within 24 hours of completion of drilling, the location and surrounding area will be cleared of all equipment, debris, materials, and junk not required for production.

    B. As soon as the reserve pit has dried all areas not needed for production (including access road) will be filled in, recontoured to approximate natural contours and as much top soil as was removed replaced leaving enough for future restoration if needed.

    C. The area will be seeded between October 1 and February 28 with the indicated species and amounts as below:

2 lbs/acre	Desert Bitterbrush
1 lbs/acre	yellow sweet clover
5 lbs/acre	crested wheatgrass
4 lbs/acre	fourwing saltbush
2 lbs/acre	forage kochia
3 lbs/acre	bottlebrush squirreltail
5 lbs/acre	Russian wildrye

    D. If the seed is drilled, the recommended seed mix can be applied at 75 percent of the recommended rate. The seeding rate is for pure live seed.

15. The stipulations set forth in the archeological clearance letter dated 9/21/90 will be strictly adhered to.

16. There will be no deviation from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be oberved. All wells, whether drilling, producing, suspended, or abandoned and/or separate facilities, will be identified in accordance with 43 CFR 3162.6.

17. "Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.6.

18. The dirt contractor will be provided with an approved copy of the surface use plan.

19. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
    - whether the materials appear eligible for the National Register of Historic Places;
    - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation in not necessary); and
    - a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

    If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction

20. This permit will be valid for a period of one (1) year from the date of approval. After permit termination, a new application will be filed for approval for any future operations.

21. If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to a contraction in the unit or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligation determined by the AO.

TABLE 1

NOTIFICATIONS

Notify Bob Turri of the San Juan Resource Area, at (801) 587-2141 for the following:

2 days prior to commencement of dirt work, construction or reclamation;

1 day prior to spudding;

1 day prior to running and cementing surface casing;

1 day prior to pressure testing of surface casing.

Notify the Moab District Office, Branch of Fluid Minerals at (801) 259-6111 for the following:

No well abandonment operations will be commenced without the prior approval of the Assistant District Manager, Minerals Division. In the case of newly drilled dry holes, and in emergency situations, verbal approval can be obtained by calling the following individuals, in the order listed.

Dale Manchester, Petroleum Engineer	Office Phone:	(801) 259-6111
	Home Phone:	(801) 259-6239
Eric Jones, Petroleum Engineer	Office Phone:	(801) 259-6111
	Home Phone:	(801) 259-2214

If unable to reach the above individuals including weekends, holidays, or after hours please call the following:

Lynn Jackson, Chief, Branch of Fluid Minerals	Office Phone:	(801) 259-6111
	Home Phone:	(801) 259-7990

24 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL ABANDONMENTS

DIVISION OF OIL, GAS AND MINING

DRL

API NO. 43-037-31564

SPUDDING INFORMATION

NAME OF COMPANY: CELSIUS ENERGY COMPANY

WELL NAME: MANTEL FEDERAL #23-1

SECTION SENW 23 TOWNSHIP 37S RANGE 23E COUNTY SAN JUAN

DRILLING CONTRACTOR EXETER

RIG # 68

SPUDDED: DATE 1-17-91

TIME 8:45 p.m.

HOW ROTARY

DRILLING WILL COMMENCE SURFACE 6:00 a.m. 1-18-91

REPORTED BY SHIRLEY LOWSETH

TELEPHONE # (307) 382-9791

DATE 1-18-91 SIGNED TAS

Form 3160-5
December 1989

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
JAN 24 1991
DIV. OF OIL & MINING

FORM APPROVED
Budget Bureau No. 1004-0135
Expires September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U-56825
6. If Indian, Allottee or Tribe Name: N/A
7. If Unit or CA, Agreement Designation: N/A
1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
8. Well Name and No.: Mantel Federal 23-1
2. Name of Operator: Celsius Energy Company
9. API Well No.: 43-037-31564 DRL
3. Address and Telephone No.: P. O. Box 458, Rock Springs, Wyoming 82902 (307) 382-9791
10. Field and Pool, or Exploratory Area: Deadman Canyon
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2488' FNL & 2098' FWL - SE NW
11. County or Parish, State: 37S 23E #23 San Juan, Utah

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other Notice of Spud	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spud Rat and Mouse Hole on 1/17/91 at 8:45 pm.
Spudded for Surface on 1/18/91 at 6:00 am.
TD 56'.
Drilling.

14. I hereby certify that the foregoing is true and correct
Signed _____ Title Drilling Superintendent Date 1/18/91

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - DOGM FORM 6

OPERATOR Celsius Energy Company OPERATOR CODE N4850

ADDRESS P. O. Box 458 PHONE NO. (307) 382-9791

Rock Springs, Wyoming 82902

OPERATORS MUST COMPLETE FORM UPON SPUDDING NEW WELL OR WHEN CHANGE IN OPERATIONS OR INTERESTS NECESSITATES CHANGE IN EXISTING ENTITY NUMBER ASSIGNMENT.

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION QQ	SC	TP	RG	COUNTY	SPUD DATE	EFFECTIVE DATE
A	99999	11188	43-037-31564 DRL	Mantel Federal Well No. 23-1	SE NW	23	37S	23E	San Juan	1/18/91	NA

COMMENTS: Federal Lease
Field - Dead Men Canyon
Unit - N/A
Proposed Zone - Akah
(New entity 11188 added 1-28-91) lcp

RECEIVED
JAN 24 1991
DIVISION OF
OIL, GAS & MINING

COMMENTS:

COMMENTS:

COMMENTS:

COMMENTS:

ACTION CODES:
- A - ESTABLISH NEW ENTITY FOR NEW WELL
- B - ADD NEW WELL TO EXISTING ENTITY
- C - RE-ASSIGN WELL FROM ONE EXISTING ENTITY TO ANOTHER EXISTING ENTITY
- D - RE-ASSIGN WELL FROM ONE EXISTING ENTITY TO A NEW ENTITY
- E - OTHER (EXPLAIN IN COMMENTS SECTION)

(SEE INSTRUCTIONS)

SIGNATURE

Drilling Superintendent 1/18/91
TITLE DATE

REPORT NO. 113924
PAGE NO. 1
TEST DATE: 8-FEB-1991

S T A R

Schlumberger Transient Analysis Report

Based on a Model Verified Interpretation Of a MFE-OH Drillstem Test

Schlumberger

COMPANY: CELSIUS ENERGY COMPANY	WELL: MANTEL FEDERAL #23-1, DST #1

TEST IDENTIFICATION

Test Type	MFE-OH DST
Test No.	1
Formation	UPPER ISMAY
Test Interval (ft)	6040 - 6094
Depth Reference	GR

WELL LOCATION

Field	WILDCAT
County	SAN JUAN
State	UTAH
Sec/Twn/Rng	S23 T37S R23E
Elevation (ft)	5777

HOLE CONDITIONS

Total Depth (MD/TVD) (ft)	6094 / 6064
Open Hole Size (in)	7 7/8
Casing/Liner I.D. (in)	
Net Productive Interval (ft)	15

MUD PROPERTIES

Mud Type	L.S.N.O.
Mud Weight (lb/gal)	8.9
Mud Resistivity (ohm.m)	3.0 @ 68F
Filtrate Resistivity (ohm.m)	3.1 @ 68F
Filtrate Chlorides (ppm)	2000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi)	2177
Gas Cushion Type	NONE
Surface Pressure (psi)	
Liquid Cushion Type	NONE
Cushion Length (ft)	

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in)	5388 / 3.80
Collar Length (ft)/I.D. (in)	612 / 2.25
Packer Depth (ft)	6040
Bottomhole Choke Size (in)	15/16
Gauge Depth (ft)/Type	6046 / J-2051

NET PIPE RECOVERY

Volume	Fluid Type	Properties
10 FT	DRILLING MUD	RESISTIVITY 3@68 F
	-	2000 PPM CHLORIDES

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
2.93 CU.FT	GAS	
10 CC	MUD	RESISTIVITY 3@68F
		FILTRATE 3.1@68F
		2000 PPM
Pressure: 390	GOR:	GLR:

INTERPRETATION RESULTS

Model of Behavior	2-POROSITY
Fluid Type Used for Analysis	GAS
Reservoir Pressure (psi)	2212 @ 6046 FT
Transmissibility (md.ft/cp)	831
Effective Permeability (md)	0.937
Skin Factor	1.40
Well.Storage Coef. (bbl/psi)	0.00148
Storativity Ratio, Omega	0.00345
Interporos.Flow Coef.,Lambda	0.00149
Radius of Investigation (ft)	28

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API)	
Basic Solids (%)	
Gas Gravity	
GOR (scf/STB)	
Water Cut (%)	0
Viscosity (cp)	0.0169
Total Compressibility (1/psi)	3.06E-4
Porosity (%)	23
Reservoir Temperature (F)	124 @ 6046 FT

PRODUCTION RATE DURING TEST: 1100 MSCF/D (LAST RATE)

COMMENTS:

THIS OPEN-HOLE DRILLSTEM TEST WAS MECHANICALLY SUCCESSFUL. THE ZONE PRODUCED GAS. RESERVOIR PARAMETERS WERE COMPUTED FROM A TYPE-CURVE MATCH OF THE FINAL SHUT-IN (PAGES 3-5). THE DATA WAS MATCHED WITH A DUAL POROSITY MODEL, WITH TRANSIENT (SLAB) INTERPOROSITY FLOW AND DECREASING WELLBORE STORAGE. ALTHOUGH THE DUAL POROSITY MODEL IS USUALLY ASSOCIATED WITH NATURALLY FRACTURED FORMATIONS, SOME LAYERED SYSTEMS ALSO EXHIBIT THIS BEHAVIOR. THE TESTED INTERVAL HAS THE CHARACTERISTICS OF MODERATE PERMEABILITY TO GAS, WITH SOME WELLBORE DAMAGE.

CALCULATIONS
GAS WELL
LOG-LOG ANALYSIS

Schlumberger

LOG [DELTA M(P)] VS. LOG (DELTA T) PLOT

WELLBORE STORAGE & SKIN
2-POROSITY TRANSIENT SLABS
PD VS. TD/CD

DATA IDENTIFICATION

FLOW PERIOD # 12, FINAL BUILDUP
M(P) = 2.130E+07 PSI**2/CP @ DELTA T=0
FLOW RATE CHANGE = 1100.0 MSCF/D

TYPE-CURVE MATCH

CURVE MATCH, CD*E(2S) = 191.86
STORATIVITY RATIO, OMEGA = 0.00345
LAMBDA*E(-2S) = 9.02E-5
PRESSURE MATCH, PD/DELTA M(P) = 1.539E-08 1/(PSI**2/CP)
TIME MATCH, (TD/CD)/DELTA T = 165.86 1/HR

CALCULATIONS

KH	14.056 MD.FT
KH/MU	831.21 MD.FT/CP
K	0.9370 MD
C	0.001478 BBL/PSI
CD	11.627
SKIN, S	1.402
OMEGA	0.00345
LAMBDA	0.00149
RADIUS OF INVESTIGATION	28.427 FT (@ 1.22 HR)

REPORT NO. 113924
PAGE NO. 3

DIMENSIONLESS MULTI-RATE PLOT: LOG-LOG MATCH FOR #12,BU

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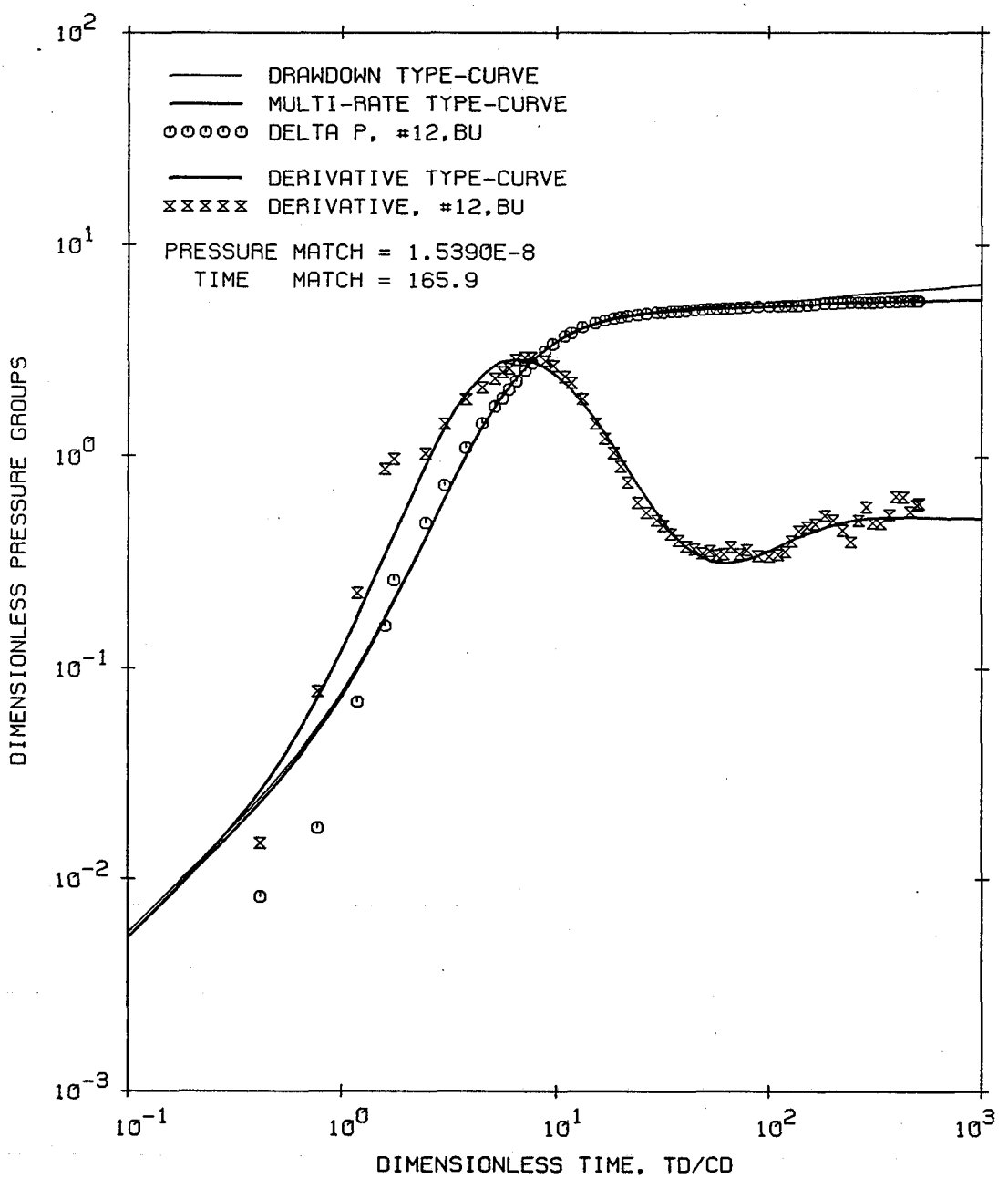


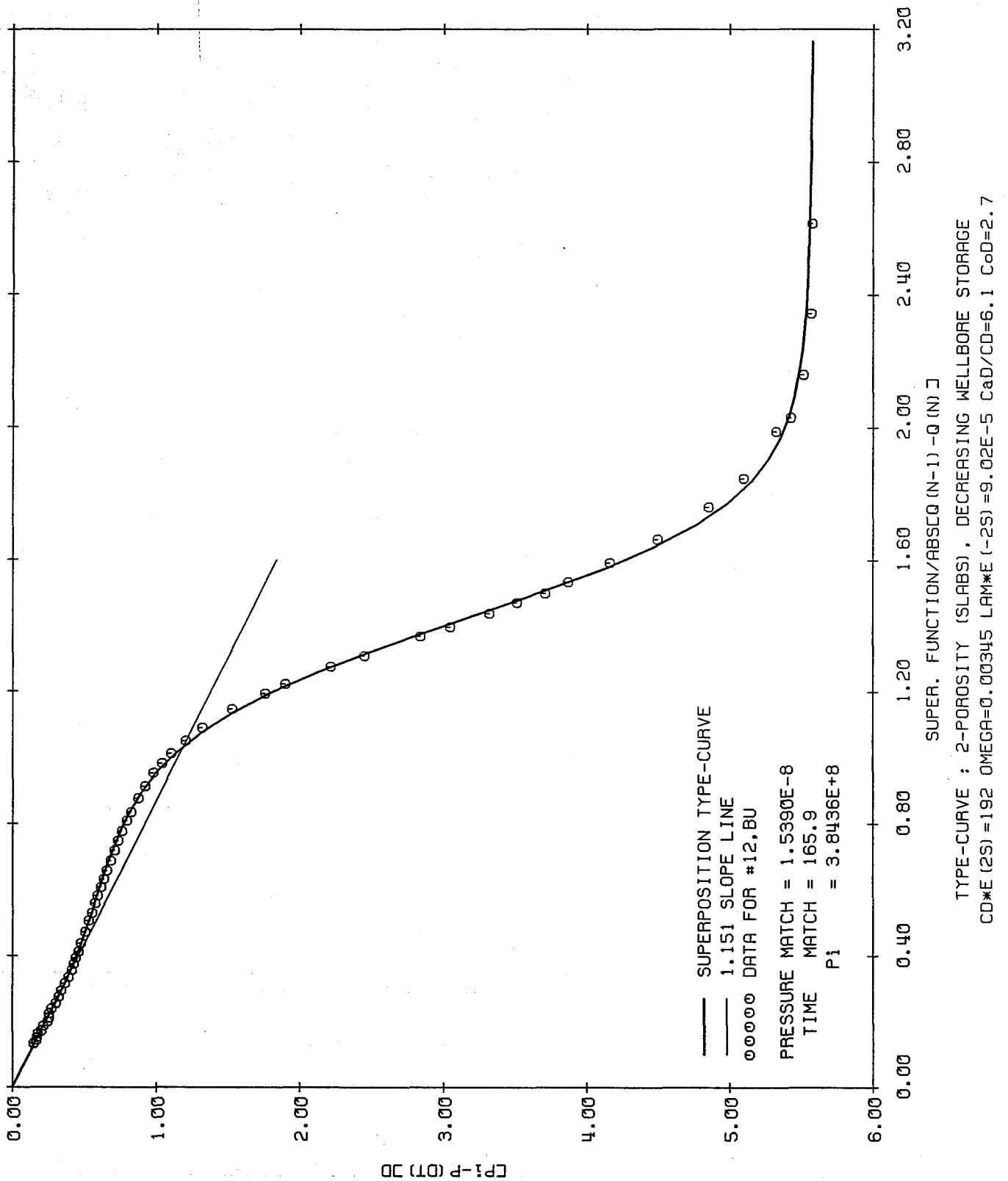
TYPE-CURVE : 2-POROSITY (SLABS), DECREASING WELLBORE STORAGE
CD*E(2S)=192 OMEGA=0.00345 LAM*E(-2S)=9.02E-5 CaD/CD=6.1 CoD=2.7

REPORT NO.
113924

PAGE NO. 4

DIMENSIONLESS SUPERPOSITION
PLOT FOR
#12.BU

Schlumberger



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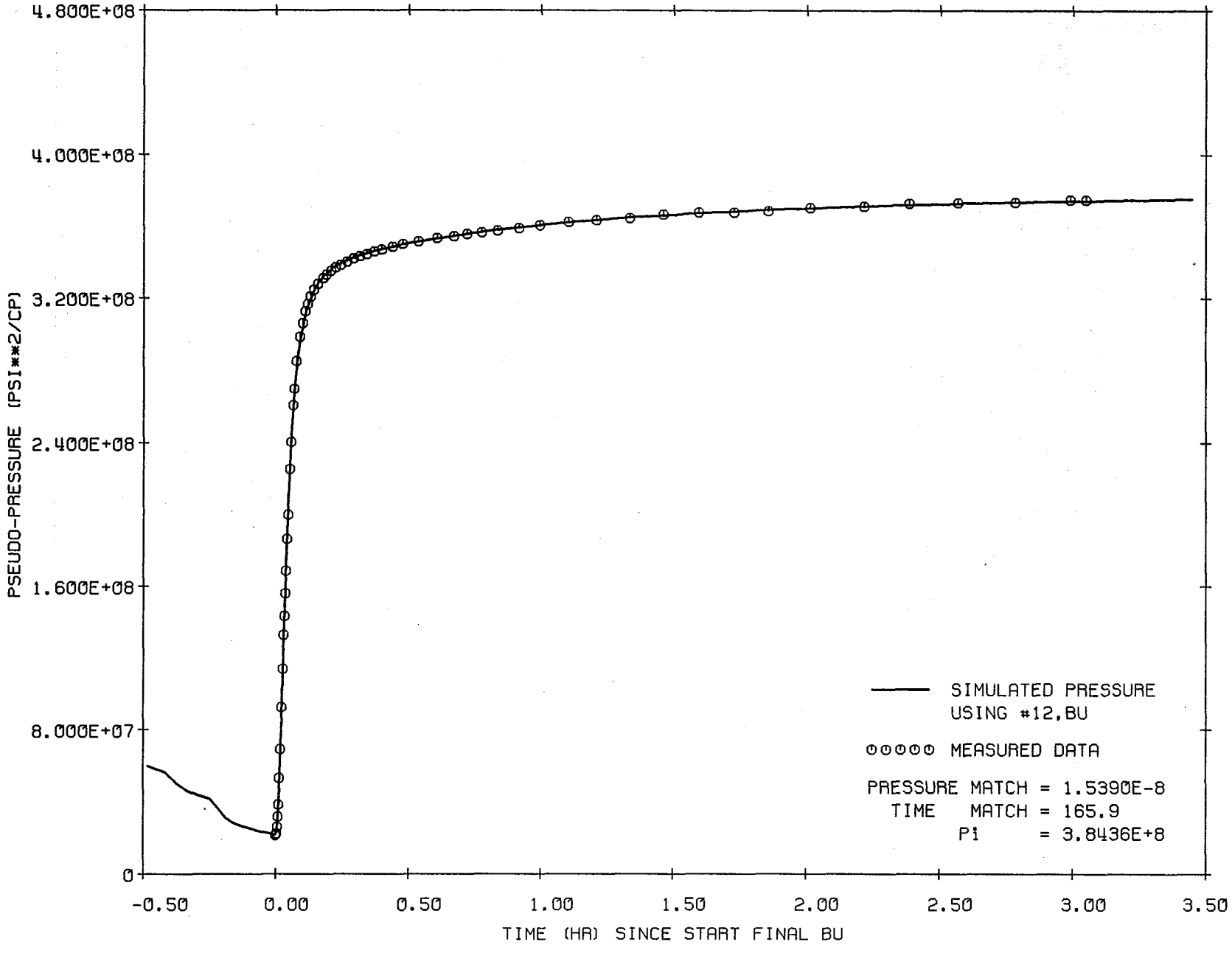
PRESSURE HISTORY MATCH
SIMULATION



TYPE-CURVE : 2-POROSITY (SLABS), DECREASING WELLBORE STORAGE
CD*E(2S) =192 OMEGA=0.00345 LAM*E(-2S) =9.02E-5 CaD/CD=6.1 CoD=2.7

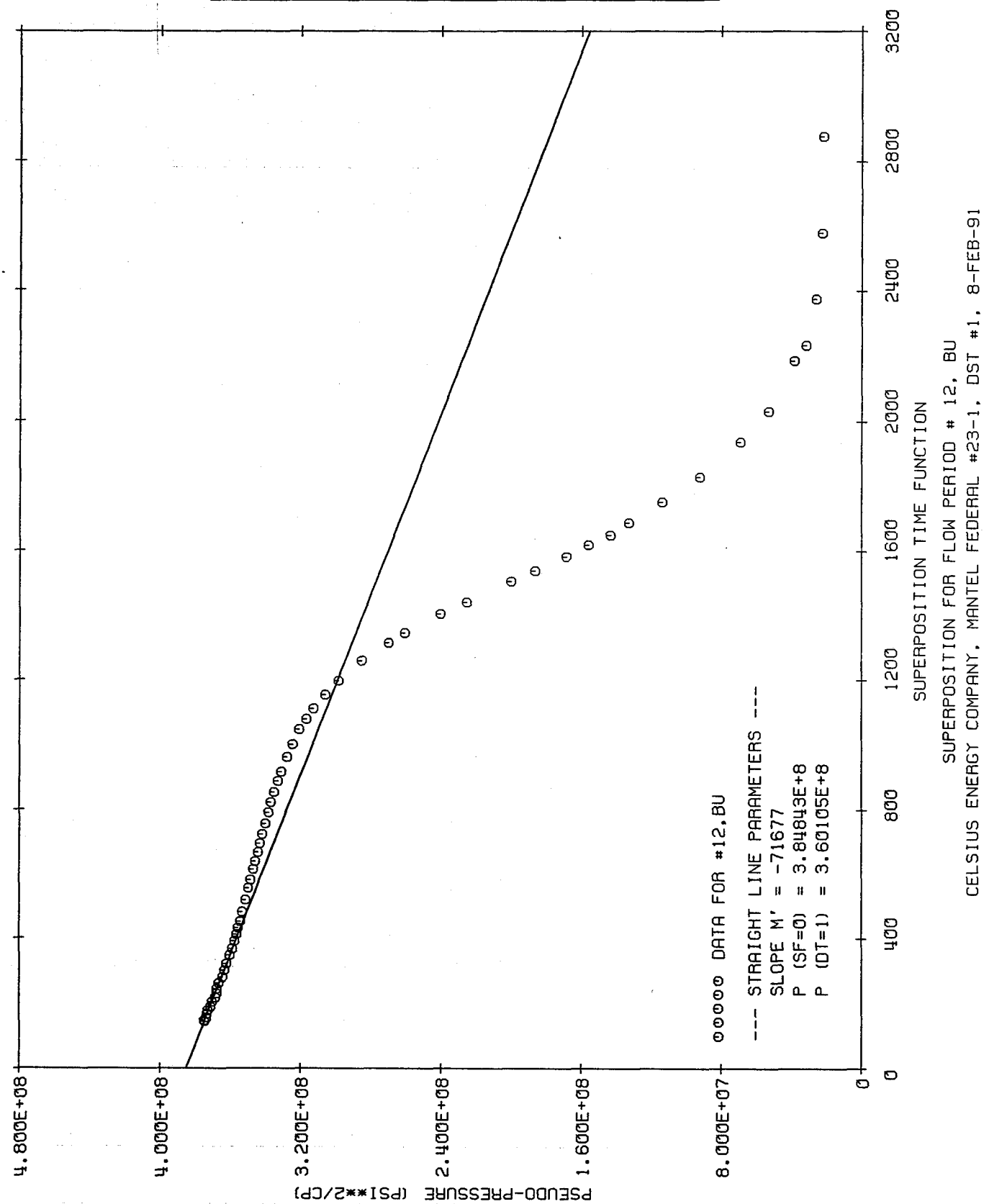
Schlumberger

REPORT NO.
113924

PAGE NO. 6

INFINITE-ACTING RADIAL FLOW
ANALYSIS: SUPERPOSITION PLOT
FOR #12,BU

Schlumberger



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FLOW RATE DATA
USED IN ANALYSIS

Schlumberger

ET VS. FLOWRATE

USING GAS RATES COMPUTED FROM SURFACE PRESSURE & CHOKE SIZE
CELSIUS ENERGY COMPANY, MANTEL FEDERAL #23-1, DST #1, 8-FEB-91

	TIME (HR) SINCE START FINAL BU	GAS FLOWRATE (MSCF/D)
1	-2.0000	20.000
2	-1.9170	50.000
3	-1.8330	80.000
4	-1.7500	0.00000E-01
5	-1.2500	550.00
6	-1.0830	825.00
7	-0.91670	950.00
8	-0.75000	1000.0
9	-0.58330	1030.0
10	-0.41670	1060.0
11	-0.25000	1100.0
12	0.00000E-01	0.00000E-01

SEQUENCE OF EVENTS

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DATE	TIME	DESCRIPTION	SURFACE CHOKE	SURFACE PRESSURE
2/8	17:29	SET PACKER		
1991	17:31	OPENED TOOL	1/8"	4 "
	17:36			50 PSI
	17:41			130 PSI
	17:46	CLOSED FOR INITIAL SHUT-IN		230 PSI
	18:16	FINISHED INITIAL SHUT-IN		
	18:18	RE-OPENED TOOL	3/8"	40 PSI
	18:23			130
	18:28			170
	18:33			220
	18:38			250
	18:43			263
	18:48			280
	18:53			290
	18:58			295
	19:03			300
	19:08			305
	19:13			309
	19:18			312
	19:23			315
	19:28	1100 MSCF/D GAS		318
	19:33	CLOSED FOR FINAL SHUT-IN		318 PSI
	22:33	FINISHED FINAL SHUT-IN		
	22:33	PULLED PACKER LOOSE		

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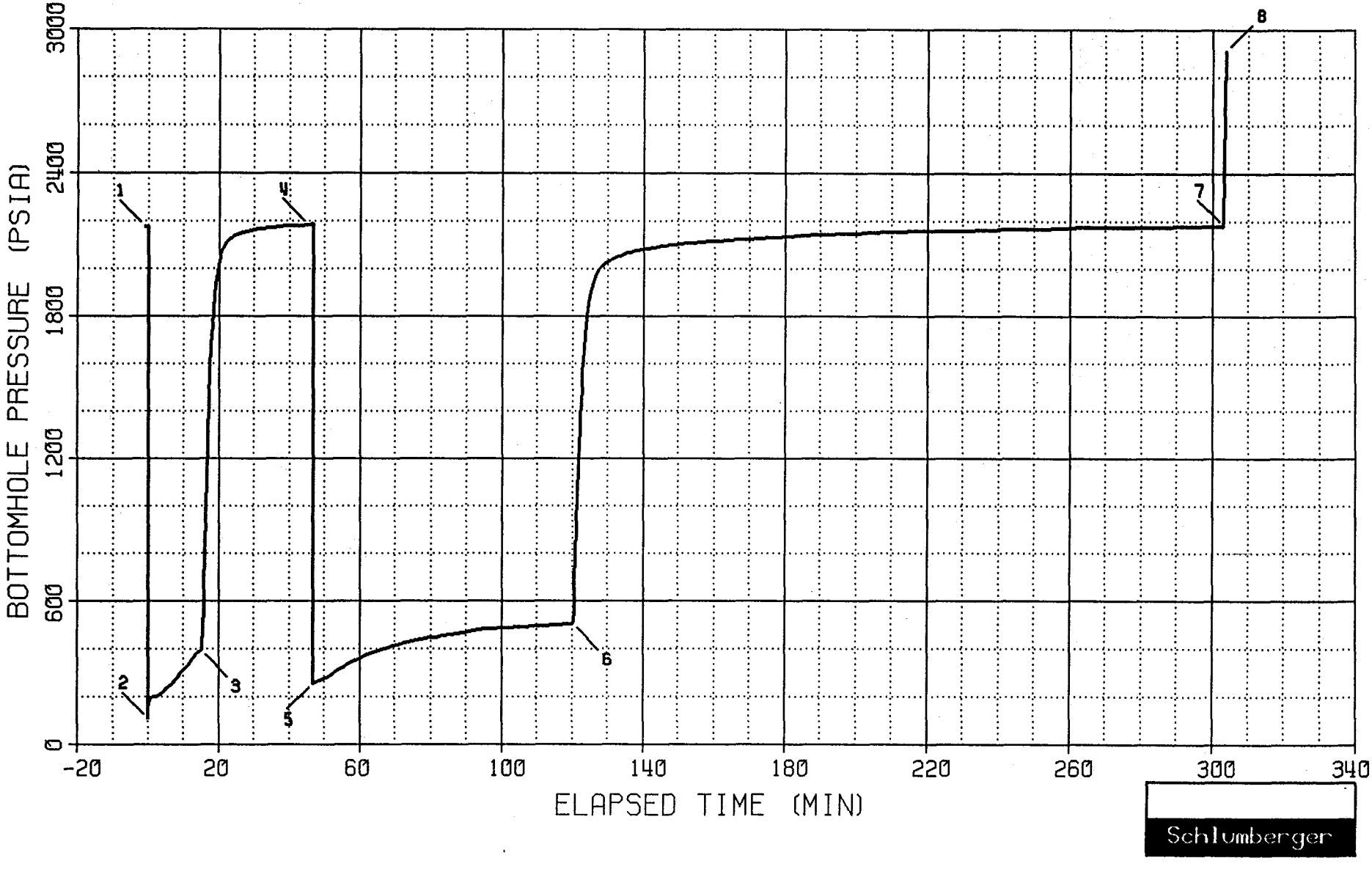
BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051
DEPTH : 6046 FT
CAPACITY : 6400 PSI
PORT OPENING : INSIDE

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1

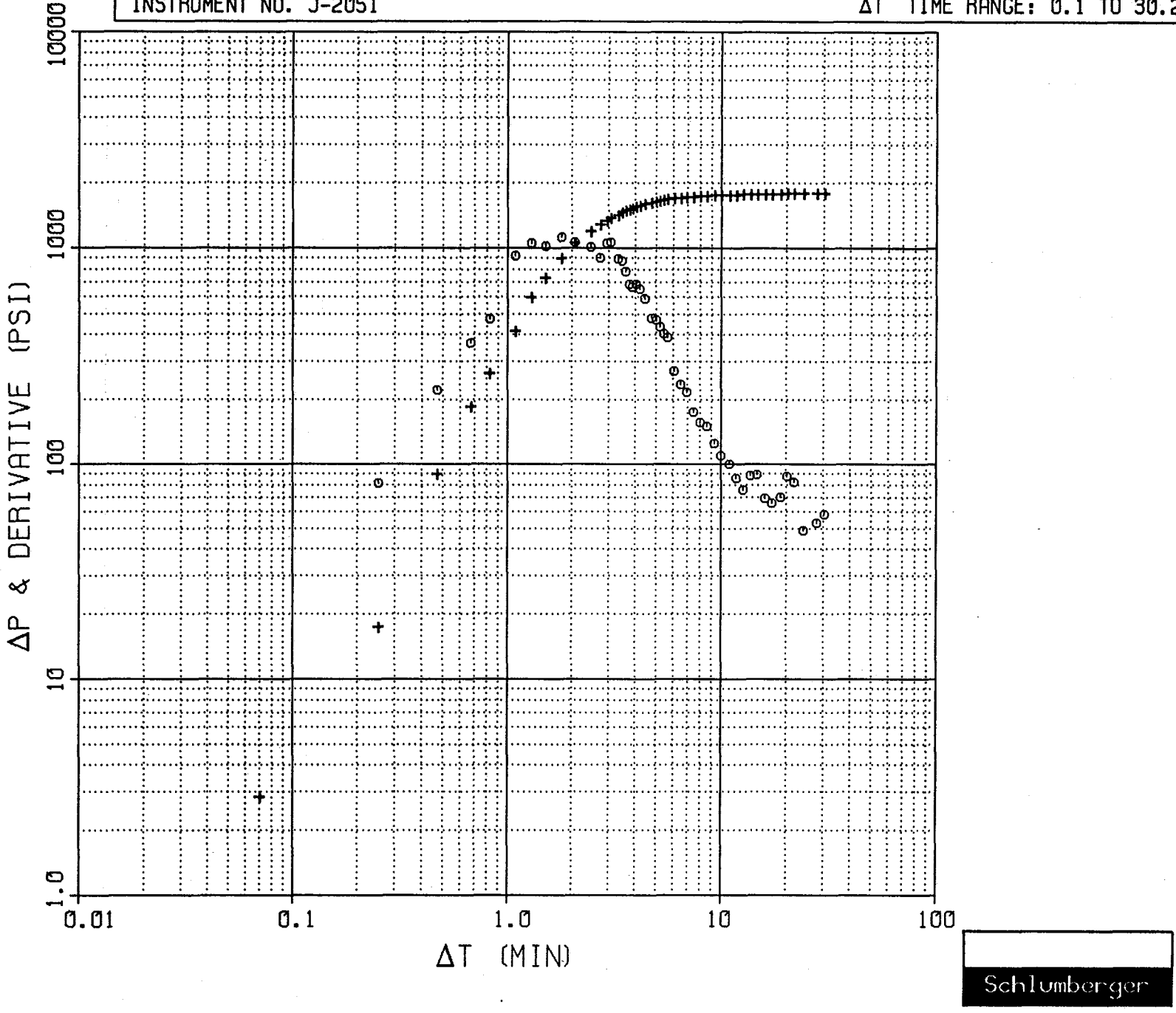
MECHANICAL RECORDER DATA

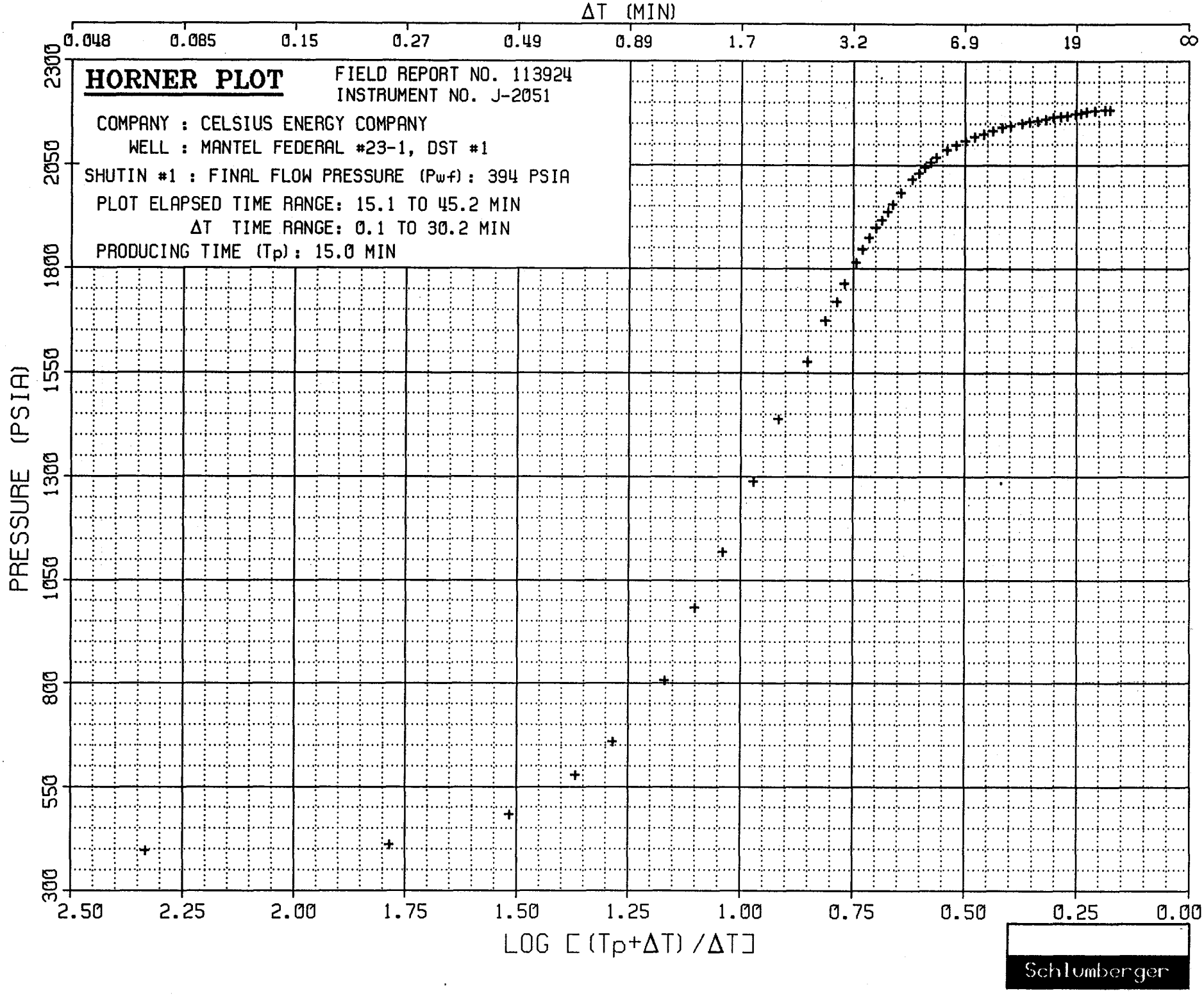


LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051

SHUTIN #1 : PRODUCING TIME (Tp): 15.0 MIN
FINAL FLOW PRESSURE (Pwf): 394 PSIA
PLOT ELAPSED TIME RANGE: 15.1 TO 45.2 MIN
ΔT TIME RANGE: 0.1 TO 30.2 MIN

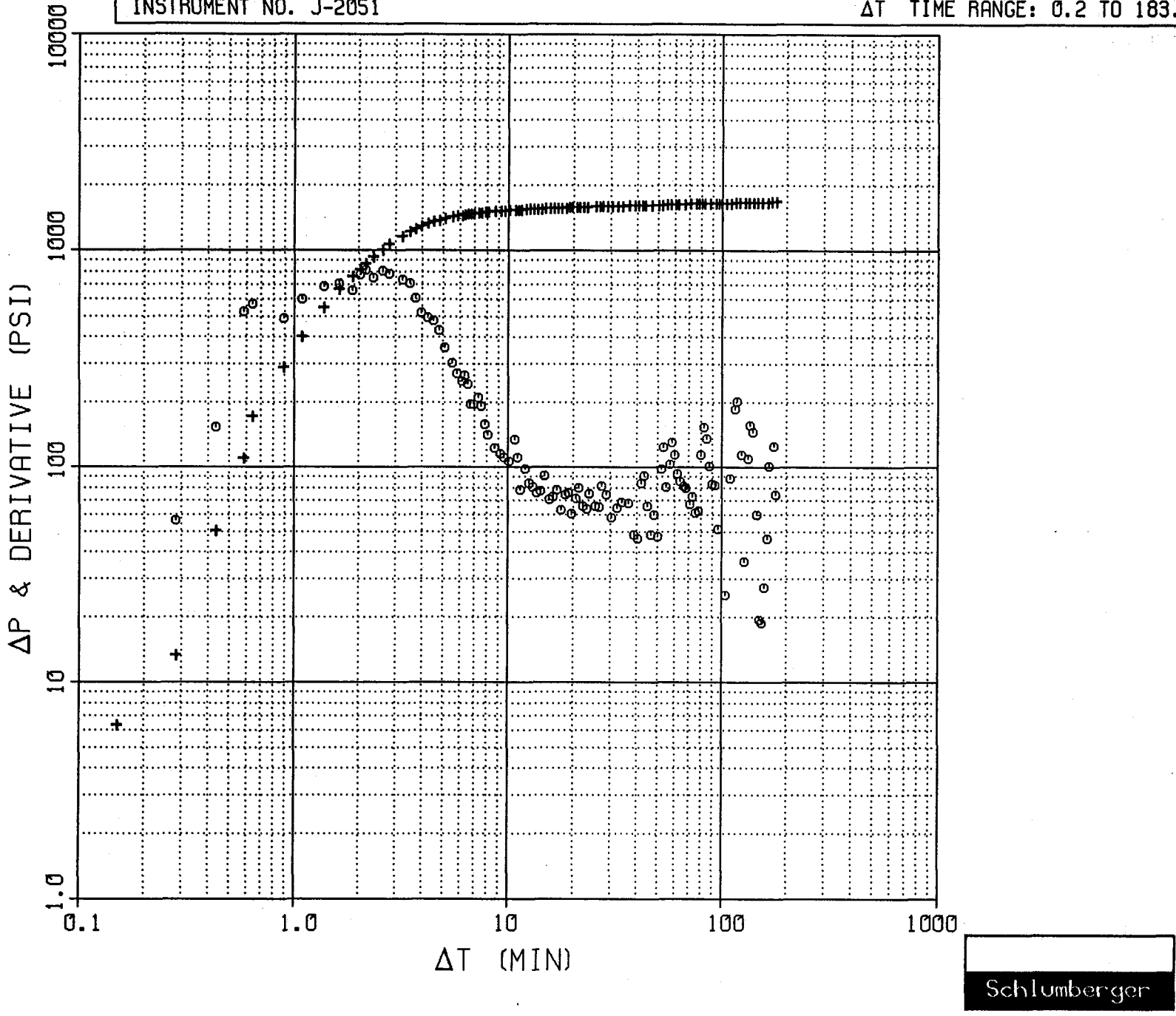


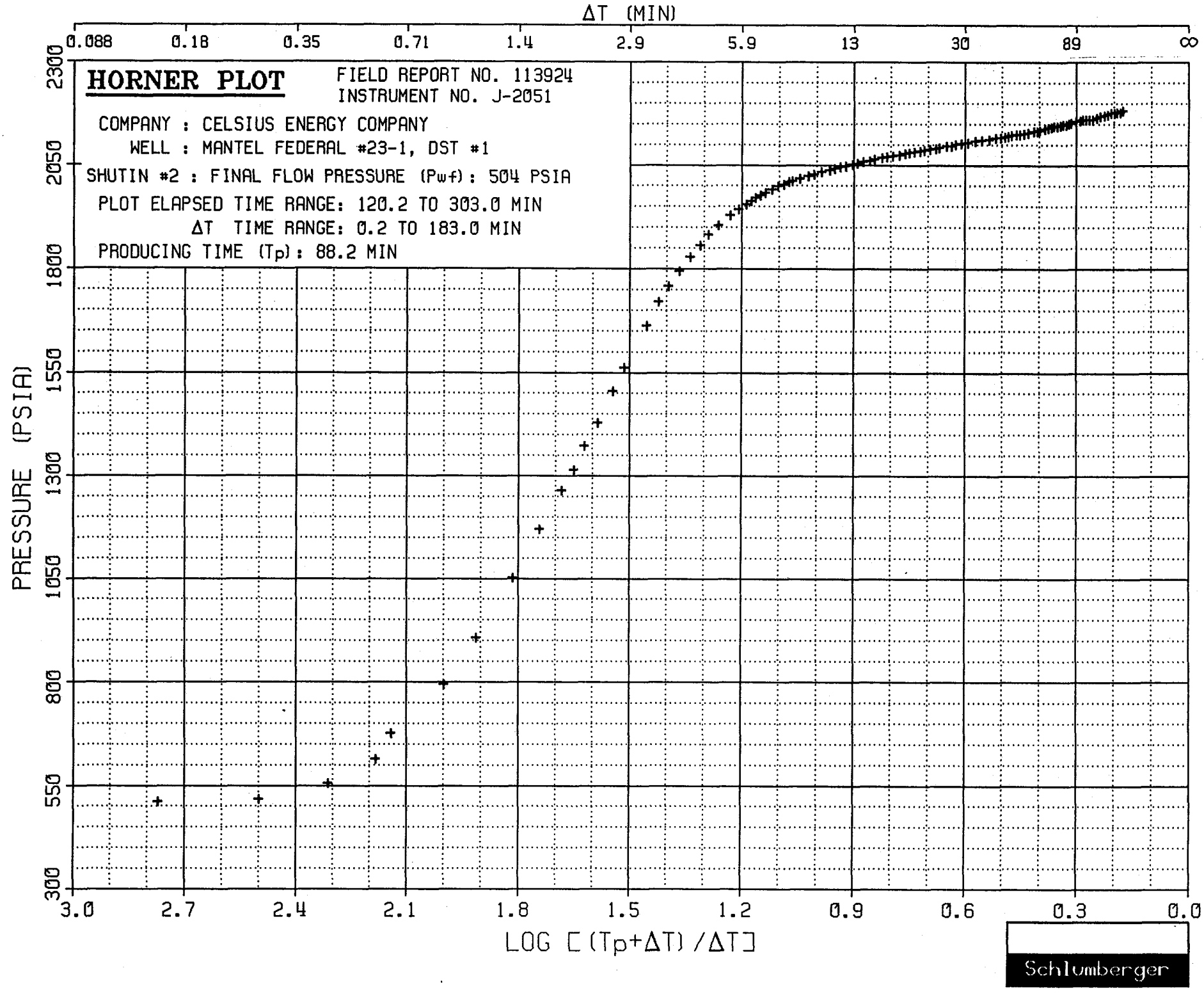

ΔT (MIN)
0.048
0.085
0.15
0.27
0.49
0.89
1.7
3.2
6.9
19
∞
HORNER PLOT
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
SHUTIN #1 : FINAL FLOW PRESSURE (Pwf) : 394 PSIA
PLOT ELAPSED TIME RANGE: 15.1 TO 45.2 MIN
ΔT TIME RANGE: 0.1 TO 30.2 MIN
PRODUCING TIME (Tp) : 15.0 MIN
PRESSURE (PSIA)
2300
2050
1800
1550
1300
1050
800
550
300
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
LOG [(Tp+ΔT)/ΔT]
Schlumberger

LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051

SHUTIN #2 : PRODUCING TIME (Tp): 88.2 MIN
FINAL FLOW PRESSURE (Pwf): 504 PSIA
PLOT ELAPSED TIME RANGE: 120.2 TO 303.0 MIN
ΔT TIME RANGE: 0.2 TO 183.0 MIN




ΔT (MIN)
0.088
0.18
0.35
0.71
1.4
2.9
5.9
13
30
89
∞
HORNER PLOT
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
SHUTIN #2 : FINAL FLOW PRESSURE (Pwf) : 504 PSIA
PLOT ELAPSED TIME RANGE: 120.2 TO 303.0 MIN
ΔT TIME RANGE: 0.2 TO 183.0 MIN
PRODUCING TIME (Tp) : 88.2 MIN
PRESSURE (PSIA)
2300
2050
1800
1550
1300
1050
800
550
300
3.0
2.7
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
LOG [(Tp+ΔT)/ΔT]
Schlumberger

****
** WELL TEST DATA PRINTOUT **
****

COMPANY: CELSIUS ENERGY COMPANY
WELL: MANTEL FEDERAL #23-1, DST #1

FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051

RECORDER CAPACITY: 6400 PSI PORT OPENING: INSIDE DEPTH: 6046 FT
TEMPERATURE: 124 DEG F

LABEL POINT INFORMATION
****

#	TIME OF DAY HH:MM:SS	DATE DD-MMM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	17:29:50	8-FEB	HYDROSTATIC MUD	-1.16	2176.5
2	17:31:00	8-FEB	START FLOW	0.00	109.5
3	17:46:00	8-FEB	END FLOW & START SHUT-IN	15.00	393.5
4	18:16:10	8-FEB	END SHUT-IN	45.17	2182.5
5	18:17:46	8-FEB	START FLOW	46.77	255.7
6	19:31:00	8-FEB	END FLOW & START SHUT-IN	120.00	504.5
7	22:34:00	8-FEB	END SHUT-IN	303.00	2181.6
8	22:34:50	8-FEB	HYDROSTATIC MUD	303.84	2912.3

SUMMARY OF FLOW PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	INITIAL PRESSURE PSIA
1	0.00	15.00	15.00	109.5	393.5	109.5
2	46.77	120.00	73.23	255.7	504.5	255.7

SUMMARY OF SHUTIN PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	15.00	45.17	30.17	393.5	2182.5	393.5	15.00
2	120.00	303.00	183.00	504.5	2181.6	504.5	88.23

TEST PHASE: FLOW PERIOD # 1

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
17:31:00	8-FEB	0.00	0.00	109.5
17:31:02	8-FEB	0.04	0.04	152.0
17:31:19	8-FEB	0.31	0.31	167.8
17:31:37	8-FEB	0.61	0.61	185.1
17:31:50	8-FEB	0.84	0.84	197.1
17:32:28	8-FEB	1.46	1.46	199.3
17:33:28	8-FEB	2.46	2.46	199.3
17:33:44	8-FEB	2.73	2.73	202.8
17:34:07	8-FEB	3.11	3.11	207.2
17:34:31	8-FEB	3.51	3.51	210.4
17:34:52	8-FEB	3.86	3.86	213.8
17:35:16	8-FEB	4.27	4.27	219.5
17:35:40	8-FEB	4.67	4.67	227.1
17:36:10	8-FEB	5.17	5.17	234.6
17:36:29	8-FEB	5.49	5.49	239.7
17:36:42	8-FEB	5.70	5.70	239.7
17:37:13	8-FEB	6.21	6.21	246.6
17:37:38	8-FEB	6.63	6.63	251.6
17:38:09	8-FEB	7.15	7.15	260.2
17:38:29	8-FEB	7.49	7.49	266.5
17:39:04	8-FEB	8.06	8.06	274.0
17:39:26	8-FEB	8.44	8.44	284.4
17:39:51	8-FEB	8.85	8.85	294.8
17:40:22	8-FEB	9.37	9.37	302.1
17:40:51	8-FEB	9.85	9.85	311.2
17:41:26	8-FEB	10.43	10.43	319.7
17:42:11	8-FEB	11.18	11.18	333.6
17:42:47	8-FEB	11.78	11.78	344.6
17:43:21	8-FEB	12.35	12.35	355.4
17:43:56	8-FEB	12.93	12.93	365.1
17:44:22	8-FEB	13.37	13.37	372.7
17:44:40	8-FEB	13.67	13.67	378.7
17:44:55	8-FEB	13.91	13.91	383.1
17:45:14	8-FEB	14.23	14.23	387.2
17:46:00	8-FEB	15.00	15.00	393.5

TEST PHASE: SHUTIN PERIOD # 1

FINAL FLOW PRESSURE = 393.5 PSIA
PRODUCING TIME = 15.00 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
17:46:00	8-FEB	15.00	0.00	393.5	0.0	
17:46:04	8-FEB	15.07	0.07	396.4	2.8	2.3330
17:46:15	8-FEB	15.25	0.25	410.9	17.3	1.7853
17:46:28	8-FEB	15.47	0.47	482.4	88.9	1.5174
17:46:40	8-FEB	15.67	0.67	577.9	184.4	1.3690
17:46:49	8-FEB	15.82	0.82	657.4	263.9	1.2854
17:47:05	8-FEB	16.09	1.09	805.8	412.3	1.1691
17:47:17	8-FEB	16.29	1.29	983.7	590.1	1.1013

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 393.5 PSIA
PRODUCING TIME = 15.00 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
17:47:30	8-FEB	16.50	1.50	1118.3	724.7	1.0414
17:47:47	8-FEB	16.79	1.79	1288.8	895.3	0.9722
17:48:04	8-FEB	17.07	2.07	1438.5	1045.0	0.9163
17:48:27	8-FEB	17.45	2.45	1576.0	1182.5	0.8526
17:48:44	8-FEB	17.73	2.73	1672.8	1279.3	0.8125
17:48:56	8-FEB	17.93	2.93	1720.4	1326.9	0.7867
17:49:04	8-FEB	18.06	3.06	1764.2	1370.7	0.7710
17:49:18	8-FEB	18.30	3.30	1814.0	1420.5	0.7439
17:49:26	8-FEB	18.44	3.44	1845.8	1452.3	0.7292
17:49:35	8-FEB	18.59	3.59	1873.6	1480.1	0.7142
17:49:44	8-FEB	18.74	3.74	1898.8	1505.3	0.6999
17:49:53	8-FEB	18.88	3.88	1916.8	1523.3	0.6872
17:50:01	8-FEB	19.02	4.02	1936.6	1543.1	0.6750
17:50:10	8-FEB	19.17	4.17	1955.5	1562.0	0.6625
17:50:25	8-FEB	19.41	4.41	1983.3	1589.8	0.6436
17:50:46	8-FEB	19.76	4.76	2013.9	1620.3	0.6182
17:50:59	8-FEB	19.98	4.98	2029.3	1635.8	0.6034
17:51:11	8-FEB	20.18	5.18	2043.5	1650.0	0.5906
17:51:24	8-FEB	20.40	5.40	2055.5	1662.0	0.5772
17:51:37	8-FEB	20.61	5.61	2067.1	1673.6	0.5651
17:52:04	8-FEB	21.07	6.07	2085.7	1692.2	0.5405
17:52:29	8-FEB	21.49	6.49	2096.5	1702.9	0.5200
17:52:55	8-FEB	21.92	6.92	2107.2	1713.7	0.5007
17:53:26	8-FEB	22.43	7.43	2116.3	1722.8	0.4798
17:54:00	8-FEB	23.00	8.00	2124.2	1730.7	0.4586
17:54:37	8-FEB	23.61	8.61	2131.4	1737.9	0.4381
17:55:17	8-FEB	24.28	9.28	2138.4	1744.9	0.4177
17:55:57	8-FEB	24.95	9.95	2142.8	1749.3	0.3992
17:56:58	8-FEB	25.96	10.96	2149.4	1755.9	0.3745
17:57:44	8-FEB	26.73	11.73	2152.9	1759.4	0.3577
17:58:41	8-FEB	27.68	12.68	2156.4	1762.8	0.3390
17:59:48	8-FEB	28.80	13.80	2159.5	1766.0	0.3195
18:00:49	8-FEB	29.82	14.82	2163.3	1769.8	0.3037
18:02:00	8-FEB	31.00	16.00	2166.1	1772.6	0.2872
18:03:12	8-FEB	32.20	17.20	2168.3	1774.8	0.2723
18:04:52	8-FEB	33.86	18.86	2171.2	1777.7	0.2541
18:06:15	8-FEB	35.25	20.25	2173.4	1779.9	0.2407
18:07:47	8-FEB	36.79	21.79	2176.5	1783.0	0.2275
18:10:11	8-FEB	39.19	24.19	2178.7	1785.2	0.2095
18:13:52	8-FEB	42.86	27.86	2180.9	1787.4	0.1871
18:16:10	8-FEB	45.17	30.17	2182.5	1789.0	0.1753

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
18:17:46	8-FEB	46.77	0.00	255.7
18:21:31	8-FEB	50.51	3.74	280.0

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
18:22:27	8-FEB	51.45	4.68	289.2
18:23:35	8-FEB	52.58	5.81	300.5
18:24:42	8-FEB	53.70	6.93	310.9
18:25:50	8-FEB	54.84	8.07	321.3
18:27:07	8-FEB	56.12	9.35	332.4
18:28:25	8-FEB	57.41	10.64	342.8
18:29:35	8-FEB	58.59	11.82	351.3
18:31:00	8-FEB	60.00	13.23	361.0
18:32:28	8-FEB	61.46	14.69	371.1
18:34:02	8-FEB	63.04	16.27	380.0
18:35:27	8-FEB	64.45	17.68	386.9
18:37:01	8-FEB	66.01	19.24	395.1
18:38:55	8-FEB	67.91	21.14	403.6
18:40:17	8-FEB	69.28	22.51	410.9
18:41:29	8-FEB	70.48	23.71	417.5
18:43:32	8-FEB	72.53	25.76	425.0
18:44:55	8-FEB	73.92	27.15	429.1
18:46:37	8-FEB	75.62	28.85	435.1
18:48:33	8-FEB	77.55	30.78	441.1
18:50:26	8-FEB	79.44	32.67	446.2
18:52:08	8-FEB	81.14	34.37	449.9
18:53:38	8-FEB	82.64	35.87	452.5
18:53:54	8-FEB	82.90	36.13	455.0
18:54:41	8-FEB	83.68	36.91	455.0
18:55:50	8-FEB	84.84	38.07	458.5
18:56:44	8-FEB	85.73	38.96	461.9
18:58:16	8-FEB	87.27	40.50	465.1
18:59:45	8-FEB	88.75	41.98	468.2
19:01:19	8-FEB	90.32	43.55	472.3
19:02:52	8-FEB	91.87	45.10	475.8
19:04:07	8-FEB	93.12	46.35	478.6
19:06:17	8-FEB	95.28	48.51	482.4
19:08:14	8-FEB	97.24	50.47	485.2
19:10:37	8-FEB	99.62	52.85	487.5
19:12:59	8-FEB	101.98	55.21	489.4
19:15:49	8-FEB	104.82	58.05	492.2
19:17:58	8-FEB	106.96	60.19	493.4
19:19:23	8-FEB	108.38	61.61	494.7
19:21:48	8-FEB	110.80	64.03	496.0
19:23:22	8-FEB	112.37	65.60	497.9
19:25:40	8-FEB	114.67	67.90	499.4
19:27:34	8-FEB	116.57	69.80	501.0
19:28:48	8-FEB	117.80	71.03	502.6
19:30:42	8-FEB	119.70	72.93	503.9
19:31:00	8-FEB	120.00	73.23	504.5

TEST PHASE: SHUTIN PERIOD # 2 FINAL FLOW PRESSURE = 504.5 PSIA
PRODUCING TIME = 88.23 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
19:31:00	8-FEB	120.00	0.00	504.5	0.0	
19:31:09	8-FEB	120.15	0.15	510.8	6.3	2.7703
19:31:17	8-FEB	120.28	0.28	517.7	13.2	2.4998
19:31:26	8-FEB	120.43	0.43	554.9	50.4	2.3143
19:31:35	8-FEB	120.58	0.58	614.2	109.7	2.1850
19:31:38	8-FEB	120.64	0.64	676.0	171.5	2.1426
19:31:53	8-FEB	120.89	0.89	794.8	290.3	2.0006
19:32:05	8-FEB	121.09	1.09	907.0	402.6	1.9135
19:32:22	8-FEB	121.37	1.37	1051.7	547.3	1.8156
19:32:37	8-FEB	121.62	1.62	1169.3	664.8	1.7440
19:32:52	8-FEB	121.86	1.86	1264.2	759.7	1.6852
19:33:01	8-FEB	122.02	2.02	1314.7	810.2	1.6501
19:33:10	8-FEB	122.16	2.16	1373.0	868.5	1.6217
19:33:20	8-FEB	122.34	2.34	1428.8	924.3	1.5878
19:33:35	8-FEB	122.58	2.58	1504.4	1000.0	1.5465
19:33:46	8-FEB	122.77	2.77	1560.2	1055.7	1.5166
19:34:12	8-FEB	123.20	3.20	1661.1	1156.6	1.4559
19:34:28	8-FEB	123.47	3.47	1718.8	1214.3	1.4220
19:34:41	8-FEB	123.69	3.69	1758.5	1254.0	1.3964
19:34:58	8-FEB	123.96	3.96	1794.1	1289.7	1.3670
19:35:14	8-FEB	124.24	4.24	1827.2	1322.8	1.3386
19:35:31	8-FEB	124.52	4.52	1856.2	1351.8	1.3122
19:35:47	8-FEB	124.78	4.78	1881.5	1377.0	1.2891
19:36:05	8-FEB	125.09	5.09	1904.5	1400.0	1.2633
19:36:31	8-FEB	125.51	5.51	1928.4	1424.0	1.2308
19:36:49	8-FEB	125.82	5.82	1943.6	1439.1	1.2084
19:37:05	8-FEB	126.09	6.09	1954.3	1449.8	1.1900
19:37:18	8-FEB	126.30	6.30	1962.2	1457.7	1.1762
19:37:30	8-FEB	126.50	6.50	1970.4	1465.9	1.1636
19:37:43	8-FEB	126.72	6.72	1976.7	1472.2	1.1501
19:37:56	8-FEB	126.94	6.94	1982.3	1477.9	1.1371
19:38:15	8-FEB	127.25	7.25	1990.5	1486.1	1.1196
19:38:32	8-FEB	127.53	7.53	1998.1	1493.6	1.1044
19:38:49	8-FEB	127.81	7.81	2003.8	1499.3	1.0898
19:39:05	8-FEB	128.09	8.09	2008.5	1504.0	1.0758
19:39:17	8-FEB	128.28	8.28	2011.3	1506.9	1.0665
19:39:41	8-FEB	128.69	8.69	2017.0	1512.5	1.0474
19:40:12	8-FEB	129.20	9.20	2023.0	1518.5	1.0249
19:40:34	8-FEB	129.57	9.57	2027.1	1522.6	1.0094
19:41:06	8-FEB	130.10	10.10	2032.2	1527.7	0.9884
19:41:43	8-FEB	130.71	10.71	2037.8	1533.3	0.9656
19:42:03	8-FEB	131.05	11.05	2041.9	1537.4	0.9535
19:42:29	8-FEB	131.48	11.48	2044.1	1539.6	0.9388
19:42:59	8-FEB	131.98	11.98	2047.6	1543.1	0.9225
19:43:32	8-FEB	132.53	12.53	2051.7	1547.2	0.9053
19:44:01	8-FEB	133.01	13.01	2053.9	1549.4	0.8911
19:44:34	8-FEB	133.57	13.57	2057.4	1552.9	0.8752
19:45:13	8-FEB	134.22	14.22	2059.6	1555.1	0.8576
19:45:44	8-FEB	134.73	14.73	2062.4	1557.9	0.8445
19:46:34	8-FEB	135.57	15.57	2066.5	1562.0	0.8239

TEST PHASE: SHUTIN PERIOD # 2 FINAL FLOW PRESSURE = 504.5 PSIA
PRODUCING TIME = 88.23 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
19:47:10	8-FEB	136.16	16.16	2068.4	1563.9	0.8102
19:47:52	8-FEB	136.87	16.87	2071.6	1567.1	0.7945
19:48:38	8-FEB	137.63	17.63	2074.1	1569.6	0.7785
19:49:28	8-FEB	138.46	18.46	2076.3	1571.8	0.7619
19:50:03	8-FEB	139.05	19.05	2078.5	1574.0	0.7506
19:50:44	8-FEB	139.74	19.74	2080.4	1575.9	0.7380
19:51:35	8-FEB	140.58	20.58	2082.3	1577.8	0.7232
19:52:16	8-FEB	141.27	21.27	2084.5	1580.0	0.7116
19:53:17	8-FEB	142.29	22.29	2087.3	1582.8	0.6953
19:54:15	8-FEB	143.25	23.25	2089.2	1584.7	0.6808
19:54:56	8-FEB	143.94	23.94	2090.8	1586.3	0.6708
19:56:18	8-FEB	145.30	25.30	2094.6	1590.1	0.6520
19:57:22	8-FEB	146.37	26.37	2096.1	1591.7	0.6381
19:58:22	8-FEB	147.36	27.36	2098.4	1593.9	0.6258
19:59:35	8-FEB	148.59	28.59	2101.2	1596.7	0.6113
20:01:14	8-FEB	150.24	30.24	2103.7	1599.2	0.5930
20:03:09	8-FEB	152.15	32.15	2106.2	1601.7	0.5734
20:04:56	8-FEB	153.94	33.94	2109.1	1604.6	0.5563
20:07:20	8-FEB	156.34	36.34	2112.2	1607.7	0.5350
20:09:29	8-FEB	158.49	38.49	2115.1	1610.6	0.5175
20:11:09	8-FEB	160.15	40.15	2116.0	1611.5	0.5048
20:12:45	8-FEB	161.75	41.75	2117.6	1613.1	0.4932
20:14:05	8-FEB	163.09	43.09	2119.8	1615.3	0.4840
20:15:22	8-FEB	164.37	44.37	2121.4	1616.9	0.4755
20:17:28	8-FEB	166.46	46.46	2122.6	1618.1	0.4623
20:18:47	8-FEB	167.78	47.78	2123.6	1619.1	0.4543
20:21:04	8-FEB	170.06	50.06	2125.8	1621.3	0.4413
20:24:13	8-FEB	173.21	53.21	2128.6	1624.1	0.4246
20:27:41	8-FEB	176.69	56.69	2131.8	1627.3	0.4076
20:30:43	8-FEB	179.71	59.71	2135.9	1631.4	0.3940
20:34:35	8-FEB	183.59	63.59	2139.3	1634.9	0.3779
20:39:02	8-FEB	188.03	68.03	2142.5	1638.0	0.3611
20:43:37	8-FEB	192.62	72.62	2145.0	1640.5	0.3454
20:48:32	8-FEB	197.54	77.54	2147.2	1642.7	0.3300
20:53:41	8-FEB	202.69	82.69	2151.0	1646.5	0.3153
20:58:44	8-FEB	207.73	87.73	2155.1	1650.6	0.3023
21:03:39	8-FEB	212.65	92.65	2157.3	1652.8	0.2905
21:10:12	8-FEB	219.20	99.20	2158.9	1654.4	0.2763
21:16:53	8-FEB	225.88	105.88	2159.5	1655.0	0.2632
21:22:20	8-FEB	231.33	111.33	2161.1	1656.6	0.2535
21:29:11	8-FEB	238.19	118.19	2165.5	1661.0	0.2422
21:34:47	8-FEB	243.78	123.78	2169.0	1664.5	0.2337
21:43:53	8-FEB	252.88	132.88	2169.9	1665.4	0.2211
21:50:46	8-FEB	259.77	139.77	2173.1	1668.6	0.2125
21:57:39	8-FEB	266.65	146.65	2176.2	1671.7	0.2046
22:05:08	8-FEB	274.13	154.13	2176.5	1672.1	0.1966
22:13:50	8-FEB	282.84	162.84	2177.2	1672.7	0.1880
22:21:40	8-FEB	290.67	170.67	2178.4	1673.9	0.1810
22:30:28	8-FEB	299.46	179.46	2181.6	1677.1	0.1737
22:34:00	8-FEB	303.00	183.00	2181.6	1677.1	0.1709

REPORT NO. 113925
PAGE NO. 1
TEST DATE: 10-FEB-1991

S T A R

Schlumberger Pressure Data Report

Based on a MFE-OH Drillstem Test

Schlumberger

COMPANY: CELSIUS ENERGY COMPANY

WELL: MANTEL FEDERAL #23-1, DST #2

TEST IDENTIFICATION

Test Type	MFE-OH DST
Test No.	2
Formation	UPPER ISMAY
Test Interval (ft)	6094 - 6133
Depth Reference	GR

WELL LOCATION

Field	WILDCAT
County	SAN JUAN
State	UTAH
Sec/Twn/Rng	S23 T37S R23E
Elevation (ft)	5777

HOLE CONDITIONS

Total Depth (MD/TVD) (ft)	6133 / 6103
Open Hole Size (in)	7 7/8
Casing/Liner I.D. (in)	
Net Productive Interval (ft)	

MUD PROPERTIES

Mud Type	L.S.N.O.
Mud Weight (lb/gal)	8.9
Mud Resistivity (ohm.m)	3.0 @ 68F
Filtrate Resistivity (ohm.m)	3.1 @ 68F
Filtrate Chlorides (ppm)	2000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi)	2892
Gas Cushion Type	NONE
Surface Pressure (psi)	
Liquid Cushion Type	NONE
Cushion Length (ft)	

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in)	5442 / 3.80
Collar Length (ft)/I.D. (in)	612 / 2.25
Packer Depth (ft)	6094
Bottomhole Choke Size (in)	15/16
Gauge Depth (ft)/Type	6100 / J-2051

NET PIPE RECOVERY

Volume	Fluid Type	Properties
300 FT	TOP: MUD	WATER/GAS/OIL CUT
		8.7# .65@68F 9800ppm
	MID: MUD	WATER CUT
		9# .18@68F 39800 ppm
273 FT	BOT: WATER	9.4# 71200 ppm

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
0.7 CU.FT	GAS	
30 CC	EMULSION	
1800 CC	WATER	95000 ppm
		0.085 RESISTIVITY
Pressure: 325	GOR:	GLR:

INTERPRETATION RESULTS

Model of Behavior	N/A
Fluid Type Used for Analysis	
Reservoir Pressure (psi)	
Transmissibility (md.ft/cp)	
Effective Permeability (md)	
Skin Factor	
Well.Storage Coef. (bbl/psi)	
Radius of Investigation (ft)	

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API)	
Basic Solids (%)	
Gas Gravity	
GOR (scf/STB)	
Water Cut (%)	
Viscosity (cp)	
Total Compressibility (1/psi)	
Porosity (%)	
Reservoir Temperature (F)	128 @ 6100 FT

PRODUCTION RATE DURING TEST: -

COMMENTS:

THIS REPORT CONTAINS THE PRESSURE DATA FROM AN OPEN-HOLE DRILLSTEM TEST. THE TEST WAS MECHANICALLY SUCCESSFUL. THE ZONE PRODUCED A TOTAL OF 573 FT OF FLUID INTO THE TEST STRING. THE FLUID WAS MUD AND WATER, GAS CUT.

SEQUENCE OF EVENTS

Schlumberger

DATE	TIME	DESCRIPTION	SURFACE CHOKE	SURFACE PRESSURE
2/10	05:45	SET PACKER		
1991	05:47	OPENED TOOL; 1" BLOW IN BUCKET	1/8"	
	05:52	10" BLOW IN BUCKET		
	05:57			1 PSI
	06:02	CLOSED FOR INITIAL SHUT-IN		1 PSI
	06:32	FINISHED INITIAL SHUT-IN		
	06:34	RE-OPENED TOOL; SLIGHT BLOW		
	06:39			3 "
	06:44			5 "
	06:49			7 "
	06:54			9 "
	06:59			7.0 OZ
	07:04			7.5 OZ
	07:09			8.5 OZ
	07:14			9.5 OZ
	07:19			10.5 OZ
	07:24			11.5 OZ
	07:29			12.5 OZ
	07:34	CLOSED FOR FINAL SHUT-IN		13.5 OZ
	10:34	FINISHED FINAL SHUT-IN		
	10:37	PULLED PACKER LOOSE		

REPORT NO. 113925
PAGE NO. 3

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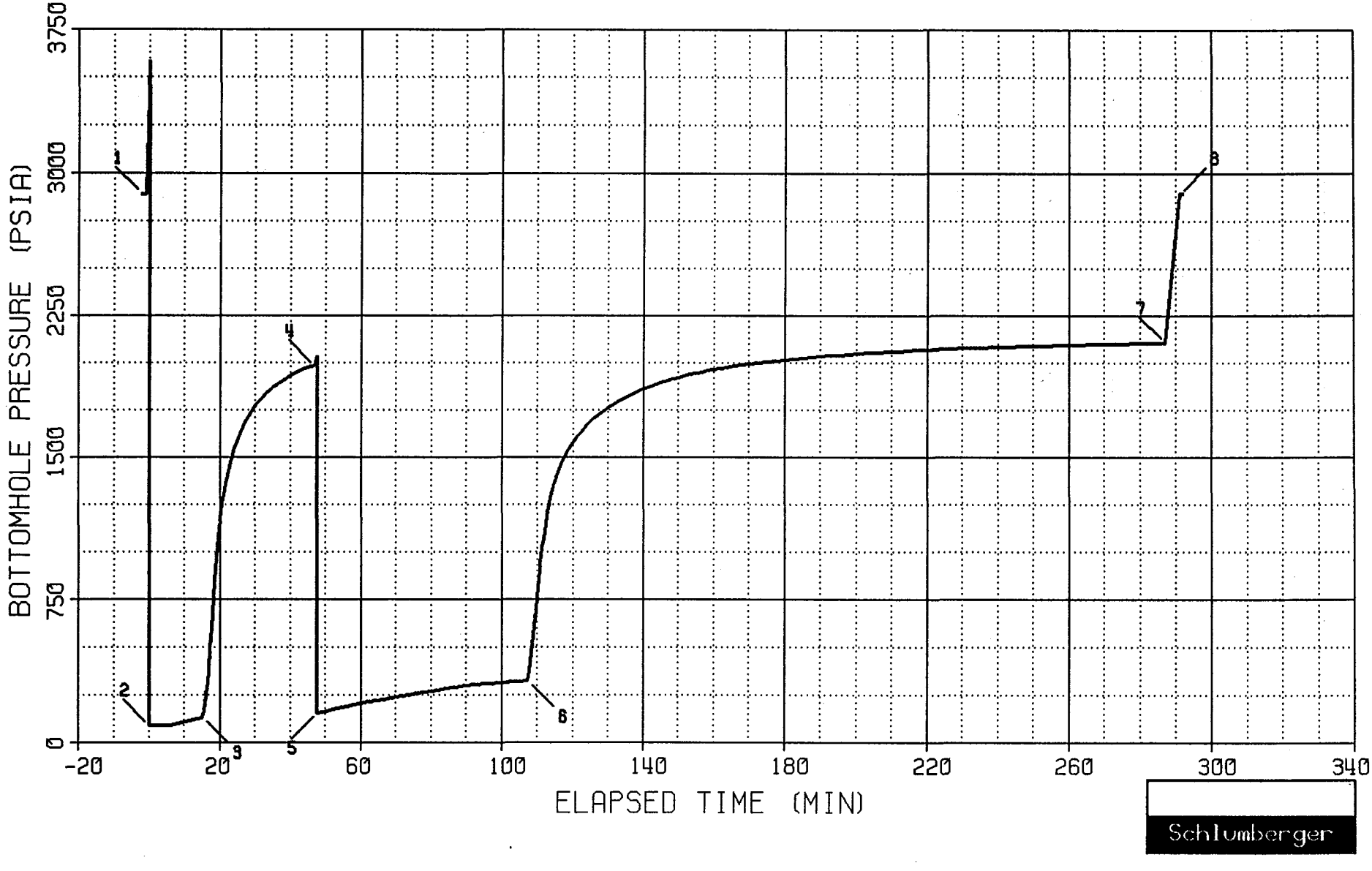
BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051
DEPTH : 6100 FT
CAPACITY : 6400 PSI
PORT OPENING : INSIDE

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2

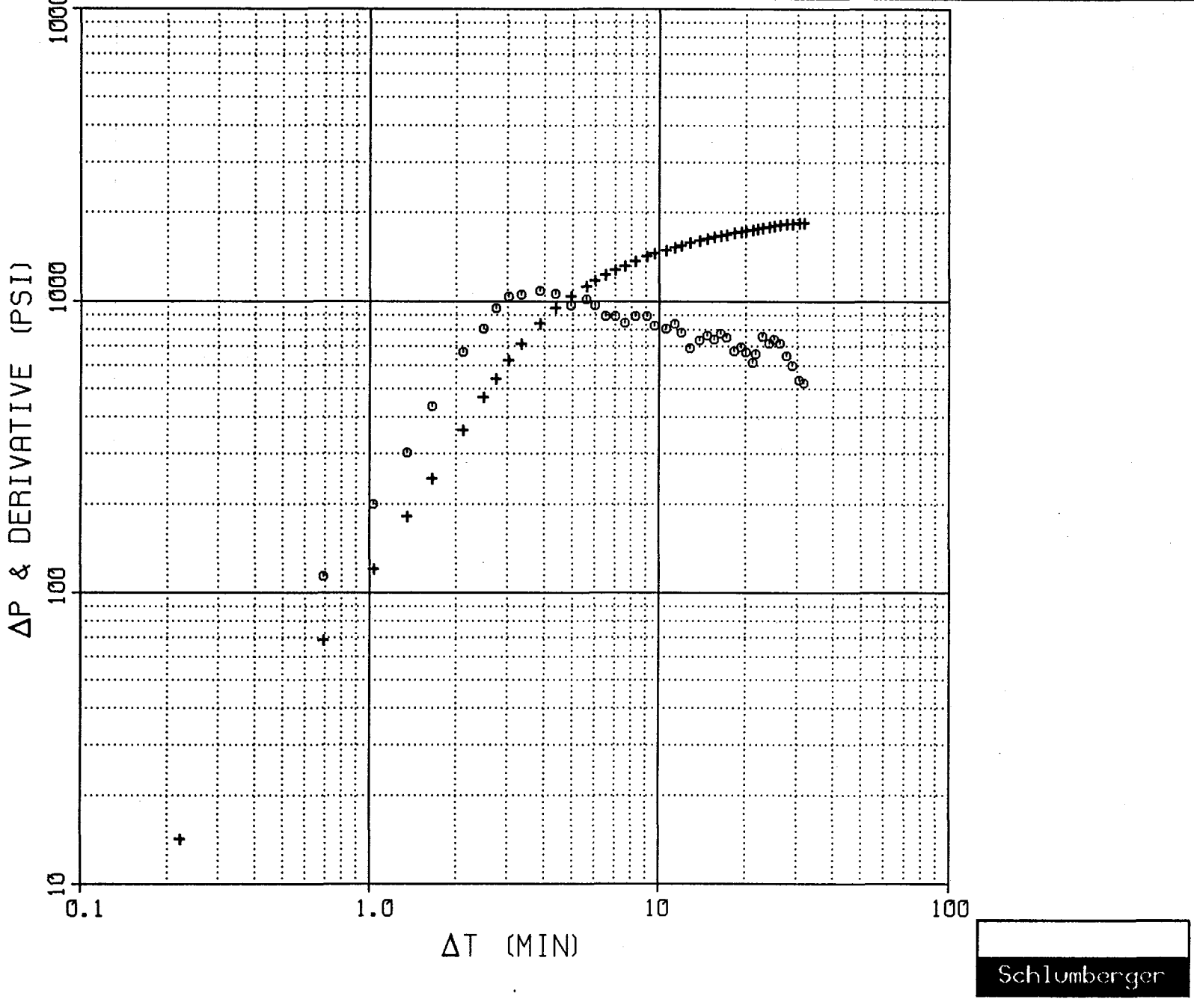
MECHANICAL RECORDER DATA

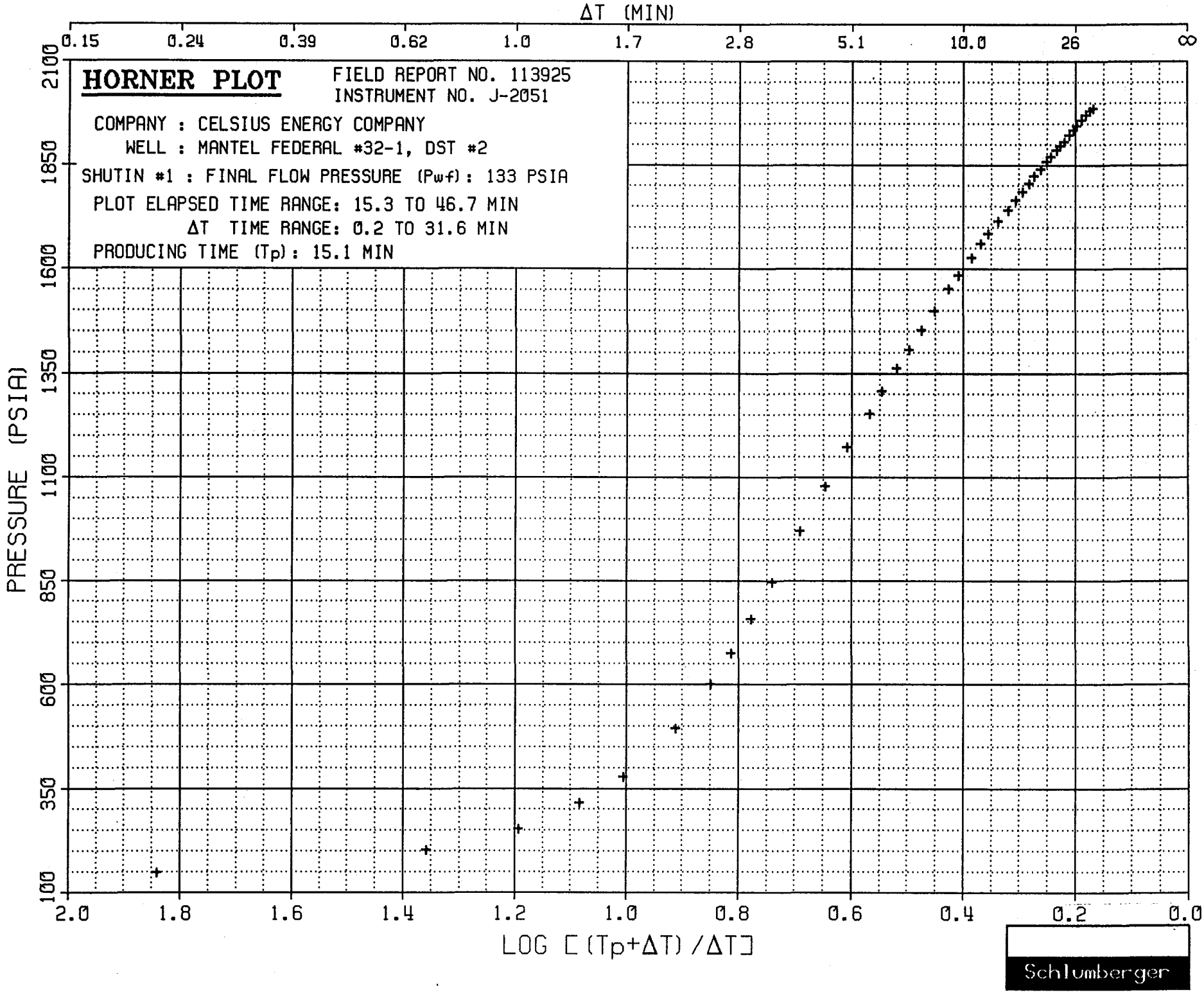


LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051

SHUTIN #1 : PRODUCING TIME (Tp): 15.1 MIN
FINAL FLOW PRESSURE (Pwf): 133 PSIA
PLOT ELAPSED TIME RANGE: 15.3 TO 46.7 MIN
ΔT TIME RANGE: 0.2 TO 31.6 MIN

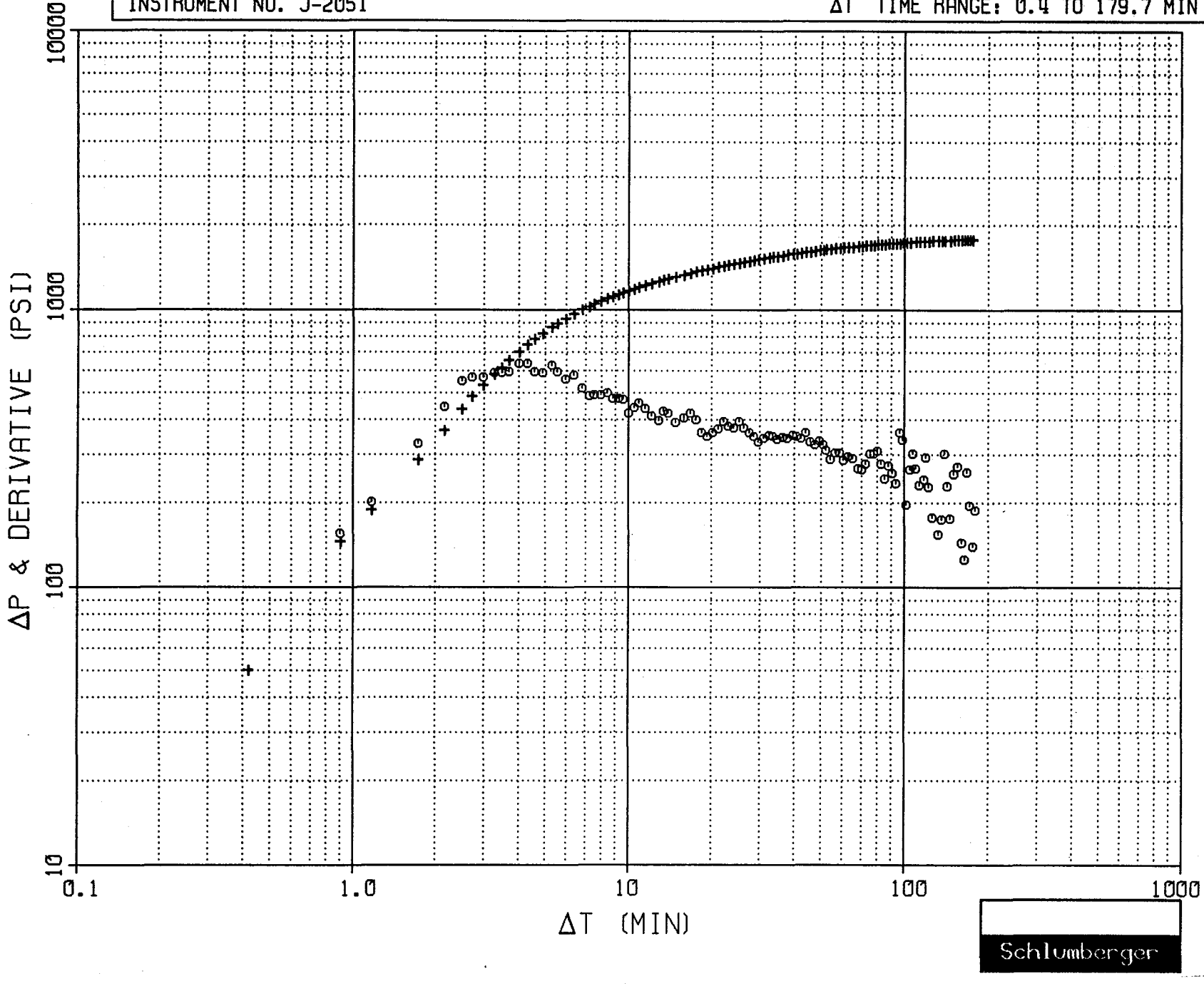


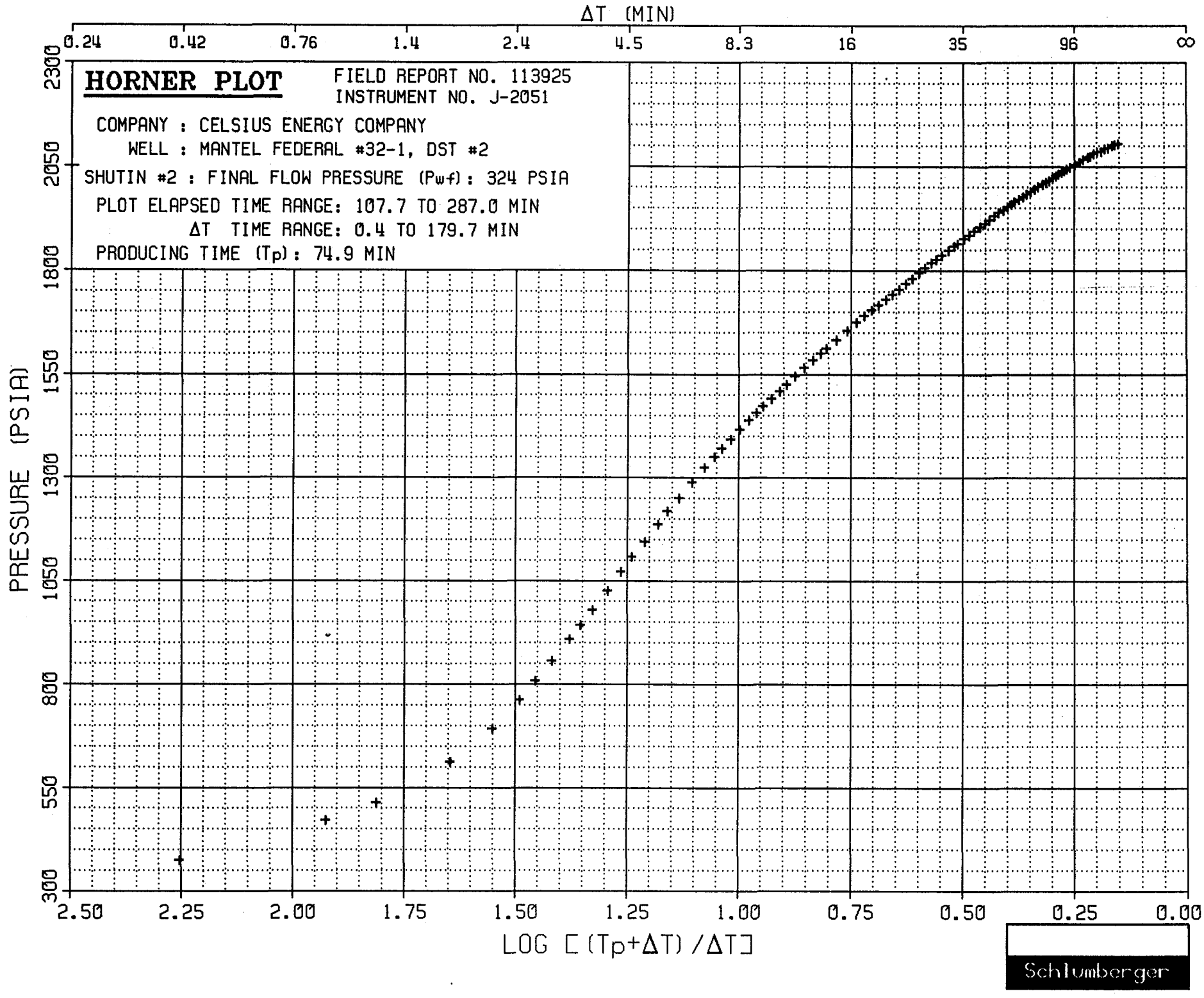

ΔT (MIN)
0.15
0.24
0.39
0.62
1.0
1.7
2.8
5.1
10.0
26
∞
HORNER PLOT
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
SHUTIN #1 : FINAL FLOW PRESSURE (Pwf) : 133 PSIA
PLOT ELAPSED TIME RANGE: 15.3 TO 46.7 MIN
ΔT TIME RANGE: 0.2 TO 31.6 MIN
PRODUCING TIME (Tp) : 15.1 MIN
PRESSURE (PSIA)
2100
1850
1600
1350
1100
850
600
350
100
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
LOG [(Tp+ΔT)/ΔT]
Schlumberger

LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051

SHUTIN #2 : PRODUCING TIME (Tp): 74.9 MIN
FINAL FLOW PRESSURE (Pwf): 324 PSIA
PLOT ELAPSED TIME RANGE: 107.7 TO 287.0 MIN
ΔT TIME RANGE: 0.4 TO 179.7 MIN




ΔT (MIN)
0.24
0.42
0.76
1.4
2.4
4.5
8.3
16
35
96
∞
HORNER PLOT
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
SHUTIN #2 : FINAL FLOW PRESSURE (Pwf) : 324 PSIA
PLOT ELAPSED TIME RANGE: 107.7 TO 287.0 MIN
ΔT TIME RANGE: 0.4 TO 179.7 MIN
PRODUCING TIME (Tp) : 74.9 MIN
PRESSURE (PSIA)
2300
2050
1800
1550
1300
1050
800
550
300
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
LOG [(Tp+ΔT)/ΔT]
Schlumberger

****
** WELL TEST DATA PRINTOUT **
****

COMPANY: CELSIUS ENERGY COMPANY
WELL: MANTEL FEDERAL #32-1, DST #2

FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051

RECORDER CAPACITY: 6400 PSI PORT OPENING: INSIDE DEPTH: 6100 FT
TEMPERATURE: 128 DEG F

LABEL POINT INFORMATION
****

#	TIME OF DAY HH:MM:SS	DATE DD-MMM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	5:44:44	10-FEB	HYDROSTATIC MUD	-2.27	2892.1
2	5:47:00	10-FEB	START FLOW	0.00	88.0
3	6:02:04	10-FEB	END FLOW & START SHUT-IN	15.06	133.1
4	6:33:40	10-FEB	END SHUT-IN	46.66	1984.9
5	6:34:29	10-FEB	START FLOW	47.48	156.8
6	7:34:19	10-FEB	END FLOW & START SHUT-IN	107.31	324.5
7	10:34:01	10-FEB	END SHUT-IN	287.01	2105.3
8	10:37:59	10-FEB	HYDROSTATIC MUD	290.99	2895.0

SUMMARY OF FLOW PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	INITIAL PRESSURE PSIA
1	0.00	15.06	15.06	88.0	133.1	88.0
2	47.48	107.31	59.83	156.8	324.5	156.8

SUMMARY OF SHUTIN PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	15.06	46.66	31.60	133.1	1984.9	133.1	15.06
2	107.31	287.01	179.70	324.5	2105.3	324.5	74.89

TEST PHASE: FLOW PERIOD # 1

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
5:47:00	10-FEB	0.00	0.00	88.0
5:50:34	10-FEB	3.56	3.56	88.0
5:52:02	10-FEB	5.03	5.03	88.0
5:53:12	10-FEB	6.20	6.20	92.1
5:55:07	10-FEB	8.11	8.11	100.3
5:57:05	10-FEB	10.08	10.08	110.1
5:58:24	10-FEB	11.40	11.40	117.0
6:00:13	10-FEB	13.22	13.22	125.2
6:01:58	10-FEB	14.96	14.96	131.6
6:02:04	10-FEB	15.06	15.06	133.1

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 133.1 PSIA
PRODUCING TIME = 15.06 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
6:02:04	10-FEB	15.06	0.00	133.1	0.0	
6:02:17	10-FEB	15.28	0.22	147.3	14.2	1.8417
6:02:45	10-FEB	15.75	0.69	201.8	68.7	1.3584
6:03:05	10-FEB	16.09	1.03	253.5	120.4	1.1937
6:03:25	10-FEB	16.41	1.35	314.7	181.6	1.0848
6:03:43	10-FEB	16.71	1.65	377.7	244.6	1.0055
6:04:10	10-FEB	17.16	2.10	493.4	360.3	0.9123
6:04:32	10-FEB	17.53	2.47	600.3	467.2	0.8511
6:04:48	10-FEB	17.80	2.74	674.4	541.3	0.8127
6:05:04	10-FEB	18.07	3.01	756.4	623.2	0.7784
6:05:24	10-FEB	18.40	3.34	844.9	711.8	0.7411
6:05:55	10-FEB	18.91	3.85	968.5	835.4	0.6912
6:06:26	10-FEB	19.43	4.37	1077.6	944.5	0.6480
6:06:59	10-FEB	19.98	4.92	1171.5	1038.4	0.6086
6:07:37	10-FEB	20.62	5.56	1252.6	1119.4	0.5692
6:08:01	10-FEB	21.02	5.96	1307.1	1174.0	0.5474
6:08:35	10-FEB	21.59	6.53	1360.4	1227.2	0.5193
6:09:04	10-FEB	22.06	7.00	1405.1	1272.0	0.4985
6:09:39	10-FEB	22.65	7.59	1451.2	1318.0	0.4748
6:10:18	10-FEB	23.30	8.24	1496.9	1363.7	0.4514
6:11:05	10-FEB	24.09	9.03	1551.1	1418.0	0.4261
6:11:41	10-FEB	24.68	9.62	1584.8	1451.7	0.4092
6:12:36	10-FEB	25.60	10.54	1627.1	1493.9	0.3854
6:13:20	10-FEB	26.34	11.28	1659.5	1526.4	0.3683
6:13:58	10-FEB	26.96	11.90	1685.1	1551.9	0.3552
6:14:53	10-FEB	27.88	12.82	1713.7	1580.6	0.3374
6:15:52	10-FEB	28.86	13.80	1740.6	1607.4	0.3204
6:16:43	10-FEB	29.71	14.65	1764.2	1631.1	0.3071
6:17:31	10-FEB	30.52	15.46	1784.7	1651.6	0.2954
6:18:24	10-FEB	31.40	16.34	1803.9	1670.8	0.2837
6:19:11	10-FEB	32.18	17.12	1822.2	1689.1	0.2741
6:20:11	10-FEB	33.19	18.13	1839.5	1706.4	0.2626
6:21:16	10-FEB	34.26	19.20	1857.2	1724.1	0.2515

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 133.1 PSIA
PRODUCING TIME = 15.06 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
6:22:03	10-FEB	35.05	19.99	1869.5	1736.4	0.2439
6:23:11	10-FEB	36.19	21.13	1884.3	1751.2	0.2337
6:23:34	10-FEB	36.56	21.50	1888.7	1755.6	0.2306
6:23:52	10-FEB	36.87	21.81	1895.0	1761.9	0.2280
6:24:44	10-FEB	37.74	22.68	1906.1	1772.9	0.2212
6:26:04	10-FEB	39.06	24.00	1921.8	1788.7	0.2115
6:27:04	10-FEB	40.07	25.01	1933.2	1800.0	0.2047
6:28:04	10-FEB	41.07	26.01	1944.2	1811.1	0.1984
6:29:37	10-FEB	42.62	27.56	1958.1	1824.9	0.1893
6:30:59	10-FEB	43.98	28.92	1968.8	1835.7	0.1821
6:32:34	10-FEB	45.57	30.51	1978.9	1845.7	0.1742
6:33:40	10-FEB	46.66	31.60	1984.9	1851.7	0.1693

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
6:34:29	10-FEB	47.48	0.00	156.8
6:36:14	10-FEB	49.23	1.75	158.0
6:37:31	10-FEB	50.52	3.04	165.0
6:38:55	10-FEB	51.92	4.44	173.5
6:40:14	10-FEB	53.24	5.76	180.1
6:41:30	10-FEB	54.50	7.02	184.8
6:43:11	10-FEB	56.19	8.71	191.1
6:44:47	10-FEB	57.79	10.31	197.7
6:46:37	10-FEB	59.62	12.14	205.3
6:48:56	10-FEB	61.93	14.45	212.6
6:51:28	10-FEB	64.47	16.99	220.8
6:53:31	10-FEB	66.52	19.04	227.4
6:55:49	10-FEB	68.81	21.33	235.3
6:58:23	10-FEB	71.39	23.91	243.1
7:00:40	10-FEB	73.67	26.19	252.3
7:03:06	10-FEB	76.10	28.62	260.5
7:04:52	10-FEB	77.87	30.39	264.6
7:07:01	10-FEB	80.01	32.53	271.8
7:08:57	10-FEB	81.95	34.47	277.2
7:11:08	10-FEB	84.13	36.65	284.1
7:13:25	10-FEB	86.41	38.93	289.8
7:15:31	10-FEB	88.51	41.03	296.7
7:16:17	10-FEB	89.29	41.81	298.9
7:17:32	10-FEB	90.53	43.05	302.4
7:18:39	10-FEB	91.65	44.17	304.6
7:20:02	10-FEB	93.04	45.56	306.5
7:21:55	10-FEB	94.92	47.44	309.3
7:23:49	10-FEB	96.82	49.34	311.9
7:25:55	10-FEB	98.92	51.44	313.8
7:27:50	10-FEB	100.84	53.36	316.0
7:29:59	10-FEB	102.98	55.50	318.5

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
7:31:45	10-FEB	104.75	57.27	321.0
7:33:48	10-FEB	106.80	59.32	324.5
7:34:19	10-FEB	107.31	59.83	324.5

TEST PHASE: SHUTIN PERIOD # 2

FINAL FLOW PRESSURE = 324.5 PSIA
PRODUCING TIME = 74.89 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
7:34:19	10-FEB	107.31	0.00	324.5	0.0	
7:34:44	10-FEB	107.73	0.42	374.6	50.1	2.2536
7:35:13	10-FEB	108.21	0.90	469.8	145.3	1.9254
7:35:29	10-FEB	108.48	1.17	512.7	188.2	1.8130
7:36:02	10-FEB	109.04	1.73	610.7	286.2	1.6463
7:36:28	10-FEB	109.47	2.16	690.8	366.3	1.5523
7:36:49	10-FEB	109.81	2.50	761.4	436.9	1.4907
7:37:02	10-FEB	110.03	2.72	809.0	484.5	1.4553
7:37:17	10-FEB	110.28	2.97	856.0	531.5	1.4186
7:37:34	10-FEB	110.57	3.26	908.3	583.8	1.3797
7:37:46	10-FEB	110.77	3.46	942.3	617.9	1.3550
7:38:00	10-FEB	111.00	3.69	978.6	654.1	1.3283
7:38:19	10-FEB	111.31	4.00	1025.3	700.8	1.2950
7:38:37	10-FEB	111.61	4.30	1071.0	746.5	1.2652
7:38:53	10-FEB	111.88	4.57	1106.3	781.8	1.2402
7:39:13	10-FEB	112.21	4.90	1144.1	819.6	1.2118
7:39:35	10-FEB	112.58	5.27	1185.7	861.2	1.1821
7:39:52	10-FEB	112.86	5.55	1216.9	892.5	1.1612
7:40:14	10-FEB	113.23	5.92	1249.1	924.6	1.1351
7:40:41	10-FEB	113.68	6.37	1288.8	964.3	1.1057
7:41:08	10-FEB	114.13	6.82	1324.4	1000.0	1.0785
7:41:32	10-FEB	114.53	7.22	1349.6	1025.2	1.0559
7:41:52	10-FEB	114.86	7.55	1369.8	1045.3	1.0382
7:42:16	10-FEB	115.26	7.95	1392.5	1068.1	1.0179
7:42:41	10-FEB	115.68	8.37	1415.8	1091.4	0.9977
7:43:06	10-FEB	116.10	8.79	1437.6	1113.1	0.9786
7:43:30	10-FEB	116.50	9.19	1455.9	1131.4	0.9614
7:43:52	10-FEB	116.87	9.56	1473.2	1148.7	0.9461
7:44:19	10-FEB	117.32	10.01	1491.5	1167.0	0.9285
7:44:49	10-FEB	117.82	10.51	1508.5	1184.1	0.9099
7:45:14	10-FEB	118.23	10.92	1524.6	1200.1	0.8953
7:45:49	10-FEB	118.82	11.51	1544.5	1220.0	0.8754
7:46:28	10-FEB	119.46	12.15	1565.3	1240.8	0.8551
7:47:10	10-FEB	120.16	12.85	1583.6	1259.1	0.8343
7:47:44	10-FEB	120.74	13.43	1599.0	1274.5	0.8180
7:48:11	10-FEB	121.19	13.88	1611.3	1286.8	0.8059
7:49:03	10-FEB	122.05	14.74	1631.2	1306.7	0.7840
7:50:08	10-FEB	123.13	15.82	1653.8	1329.4	0.7584
7:51:03	10-FEB	124.05	16.74	1673.4	1348.9	0.7383
7:51:51	10-FEB	124.85	17.54	1689.5	1365.0	0.7218

TEST PHASE: SHUTIN PERIOD # 2 FINAL FLOW PRESSURE = 324.5 PSIA
PRODUCING TIME = 74.89 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
7:52:40	10-FEB	125.67	18.36	1703.3	1378.9	0.7058
7:53:28	10-FEB	126.46	19.15	1715.0	1390.5	0.6911
7:54:26	10-FEB	127.43	20.12	1728.9	1404.4	0.6741
7:55:20	10-FEB	128.34	21.03	1741.5	1417.0	0.6591
7:56:17	10-FEB	129.29	21.98	1754.4	1430.0	0.6442
7:57:17	10-FEB	130.29	22.98	1768.6	1444.1	0.6293
7:58:22	10-FEB	131.36	24.05	1780.6	1456.1	0.6143
7:59:25	10-FEB	132.42	25.11	1793.5	1469.0	0.6002
8:00:31	10-FEB	133.51	26.20	1805.8	1481.3	0.5864
8:01:40	10-FEB	134.66	27.35	1817.2	1492.7	0.5727
8:02:38	10-FEB	135.63	28.32	1826.3	1501.8	0.5616
8:03:52	10-FEB	136.87	29.56	1836.7	1512.2	0.5482
8:05:18	10-FEB	138.30	30.99	1847.7	1523.3	0.5336
8:06:35	10-FEB	139.58	32.27	1857.8	1533.3	0.5212
8:07:34	10-FEB	140.56	33.25	1865.1	1540.6	0.5122
8:09:07	10-FEB	142.11	34.80	1876.1	1551.6	0.4986
8:10:33	10-FEB	143.55	36.24	1885.2	1560.8	0.4866
8:11:55	10-FEB	144.91	37.60	1894.1	1569.6	0.4759
8:13:43	10-FEB	146.72	39.41	1904.2	1579.7	0.4624
8:15:11	10-FEB	148.19	40.88	1913.0	1588.5	0.4521
8:16:44	10-FEB	149.74	42.43	1920.9	1596.4	0.4417
8:18:25	10-FEB	151.42	44.11	1929.7	1605.2	0.4310
8:20:00	10-FEB	153.00	45.69	1937.6	1613.1	0.4215
8:21:52	10-FEB	154.86	47.55	1945.1	1620.7	0.4108
8:23:33	10-FEB	156.55	49.24	1952.4	1627.9	0.4016
8:26:30	10-FEB	159.50	52.19	1963.7	1639.3	0.3865
8:30:36	10-FEB	163.60	56.29	1976.3	1651.9	0.3674
8:34:47	10-FEB	167.78	60.47	1988.6	1664.2	0.3500
8:39:21	10-FEB	172.35	65.04	2000.3	1675.8	0.3327
8:44:38	10-FEB	177.63	70.32	2011.3	1686.9	0.3149
8:49:29	10-FEB	182.48	75.17	2020.8	1696.3	0.3002
8:54:23	10-FEB	187.39	80.08	2030.2	1705.8	0.2867
8:59:15	10-FEB	192.25	84.94	2038.1	1713.7	0.2745
9:04:48	10-FEB	197.80	90.49	2046.0	1721.6	0.2619
9:10:38	10-FEB	203.63	96.32	2052.6	1728.2	0.2498
9:16:07	10-FEB	209.11	101.80	2059.9	1735.4	0.2395
9:21:12	10-FEB	214.20	106.89	2064.9	1740.5	0.2306
9:27:18	10-FEB	220.30	112.99	2070.9	1746.4	0.2208
9:31:27	10-FEB	224.45	117.14	2073.8	1749.3	0.2147
9:36:46	10-FEB	229.77	122.46	2078.8	1754.3	0.2072
9:42:26	10-FEB	235.44	128.13	2082.3	1757.8	0.1999
9:49:59	10-FEB	242.99	135.68	2085.4	1760.9	0.1909
9:56:54	10-FEB	249.90	142.59	2090.5	1766.0	0.1833
10:04:38	10-FEB	257.64	150.33	2093.9	1769.5	0.1756
10:14:01	10-FEB	267.02	159.71	2099.3	1774.8	0.1670
10:21:50	10-FEB	274.84	167.53	2101.2	1776.7	0.1605
10:30:01	10-FEB	283.01	175.70	2104.0	1779.6	0.1542
10:34:01	10-FEB	287.01	179.70	2105.3	1780.8	0.1513

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TEST DATE: 8-FEB-1991

S T A R

Schlumberger Transient Analysis Report

Based on a Model Verified Interpretation Of a MFE-OH Drillstem Test

Schlumberger

COMPANY: CELSIUS ENERGY COMPANY

WELL: MANTEL FEDERAL #23-1, DST #1

TEST IDENTIFICATION

Test Type	MFE-OH DST
Test No.	1
Formation	UPPER ISMAY
Test Interval (ft)	6040 - 6094
Depth Reference	GR

WELL LOCATION

Field	WILDCAT
County	SAN JUAN
State	UTAH
Sec/Twn/Rng	S23 T37S R23E
Elevation (ft)	5777

HOLE CONDITIONS

Total Depth (MD/TVD) (ft)	6094 / 6064
Open Hole Size (in)	7 7/8
Casing/Liner I.D. (in)	
Net Productive Interval (ft)	15

MUD PROPERTIES

Mud Type	L.S.N.O.
Mud Weight (lb/gal)	8.9
Mud Resistivity (ohm.m)	3.0 @ 68F
Filtrate Resistivity (ohm.m)	3.1 @ 68F
Filtrate Chlorides (ppm)	2000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi)	2177
Gas Cushion Type	NONE
Surface Pressure (psi)	
Liquid Cushion Type	NONE
Cushion Length (ft)	

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in)	5388 / 3.80
Collar Length (ft)/I.D. (in)	612 / 2.25
Packer Depth (ft)	6040
Bottomhole Choke Size (in)	15/16
Gauge Depth (ft)/Type	6046 / J-2051

NET PIPE RECOVERY

Volume	Fluid Type	Properties
10 FT	DRILLING MUD	RESISTIVITY 3@68 F
		2000 PPM CHLORIDES

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
2.93 CU.FT	GAS	
10 CC	MUD	RESISTIVITY 3@68F
		FILTRATE 3.1@68F
		2000 PPM
Pressure: 390	GOR:	GLR:

INTERPRETATION RESULTS

Model of Behavior	2-POROSITY
Fluid Type Used for Analysis	GAS
Reservoir Pressure (psi)	2212 @ 6046 FT
Transmissibility (md.ft/cp)	831
Effective Permeability (md)	0.937
Skin Factor	1.40
Well.Storage Coef. (bbl/psi)	0.00148
Storativity Ratio, Omega	0.00345
Interporos.Flow Coef.,Lambda	0.00149
Radius of Investigation (ft)	28

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API)	
Basic Solids (%)	
Gas Gravity	
GOR (scf/STB)	
Water Cut (%)	0
Viscosity (cp)	0.0169
Total Compressibility (1/psi)	3.06E-4
Porosity (%)	23
Reservoir Temperature (F)	124 @ 6046 FT

PRODUCTION RATE DURING TEST: 1100 MSCF/D (LAST RATE)

COMMENTS:

THIS OPEN-HOLE DRILLSTEM TEST WAS MECHANICALLY SUCCESSFUL. THE ZONE PRODUCED GAS. RESERVOIR PARAMETERS WERE COMPUTED FROM A TYPE-CURVE MATCH OF THE FINAL SHUT-IN (PAGES 3-5). THE DATA WAS MATCHED WITH A DUAL POROSITY MODEL, WITH TRANSIENT (SLAB) INTERPOROSITY FLOW AND DECREASING WELLBORE STORAGE. ALTHOUGH THE DUAL POROSITY MODEL IS USUALLY ASSOCIATED WITH NATURALLY FRACTURED FORMATIONS, SOME LAYERED SYSTEMS ALSO EXHIBIT THIS BEHAVIOR. THE TESTED INTERVAL HAS THE CHARACTERISTICS OF MODERATE PERMEABILITY TO GAS, WITH SOME WELLBORE DAMAGE.

CALCULATIONS
GAS WELL
LOG-LOG ANALYSIS

Schlumberger

LOG [DELTA M(P)] VS. LOG (DELTA T) PLOT

WELLBORE STORAGE & SKIN
2-POROSITY TRANSIENT SLABS
PD VS. TD/CD

DATA IDENTIFICATION

FLOW PERIOD # 12, FINAL BUILDUP
M(P) = 2.130E+07 PSI**2/CP @ DELTA T=0
FLOW RATE CHANGE = 1100.0 MSCF/D

TYPE-CURVE MATCH

CURVE MATCH, CD*E(2S) = 191.86
STORATIVITY RATIO, OMEGA = 0.00345
LAMBDA*E(-2S) = 9.02E-5
PRESSURE MATCH, PD/DELTA M(P) = 1.539E-08 1/(PSI**2/CP)
TIME MATCH, (TD/CD)/DELTA T = 165.86 1/HR

CALCULATIONS

KH	14.056 MD.FT
KH/MU	831.21 MD.FT/CP
K	0.9370 MD
C	0.001478 BBL/PSI
CD	11.627
SKIN, S	1.402
OMEGA	0.00345
LAMBDA	0.00149
RADIUS OF INVESTIGATION	28.427 FT (@ 1.22 HR)

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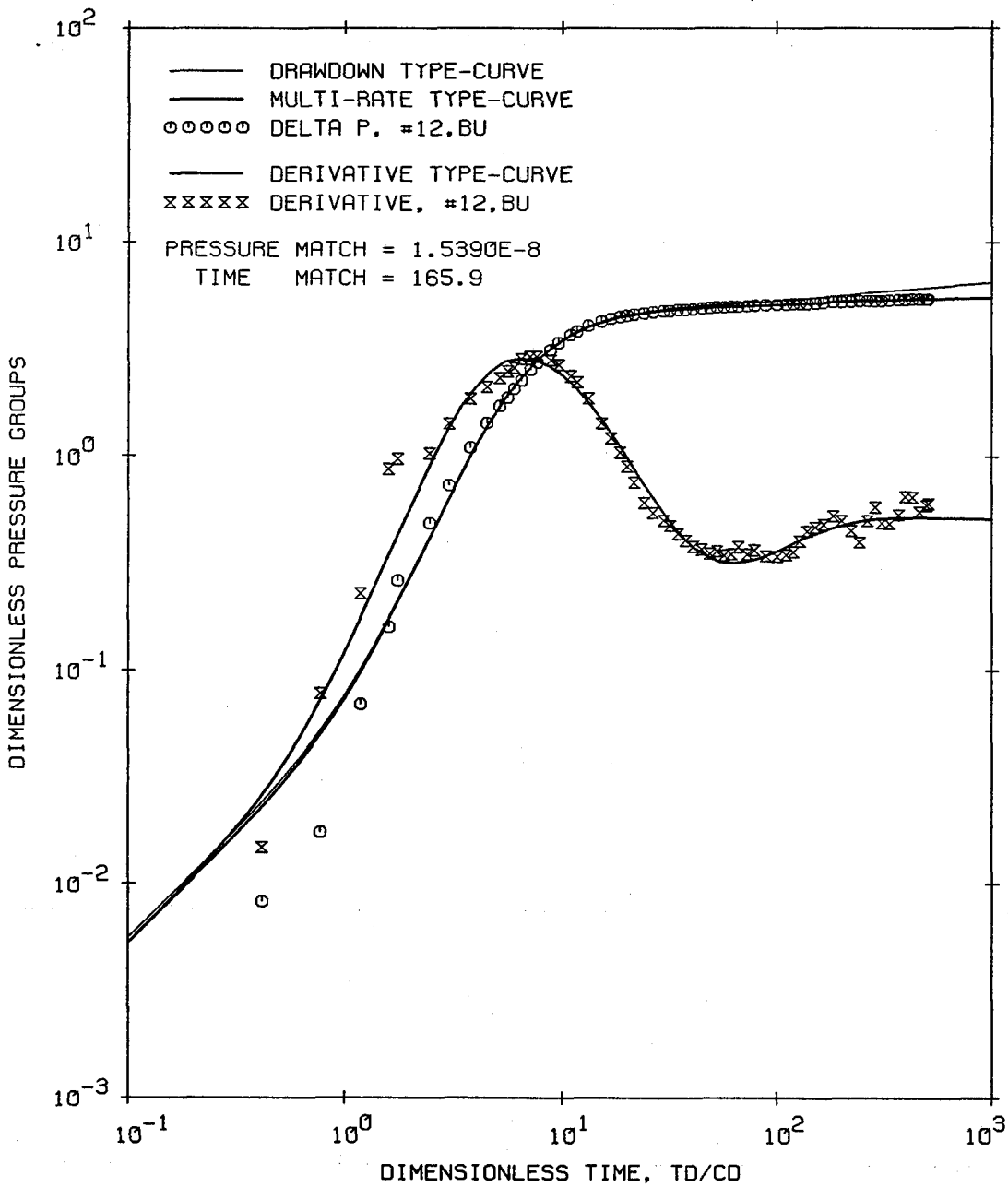
DIMENSIONLESS MULTI-RATE PLOT: LOG-LOG MATCH FOR #12.BU

Schlumberger



TYPE-CURVE : 2-POROSITY (SLABS), DECREASING WELLBORE STORAGE
CD*E(2S)=192 OMEGA=0.00345 LAM*E(-2S)=9.02E-5 CaD/CD=6.1 CoD=2.7

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DIMENSIONLESS SUPERPOSITION PLOT FOR #12.BU

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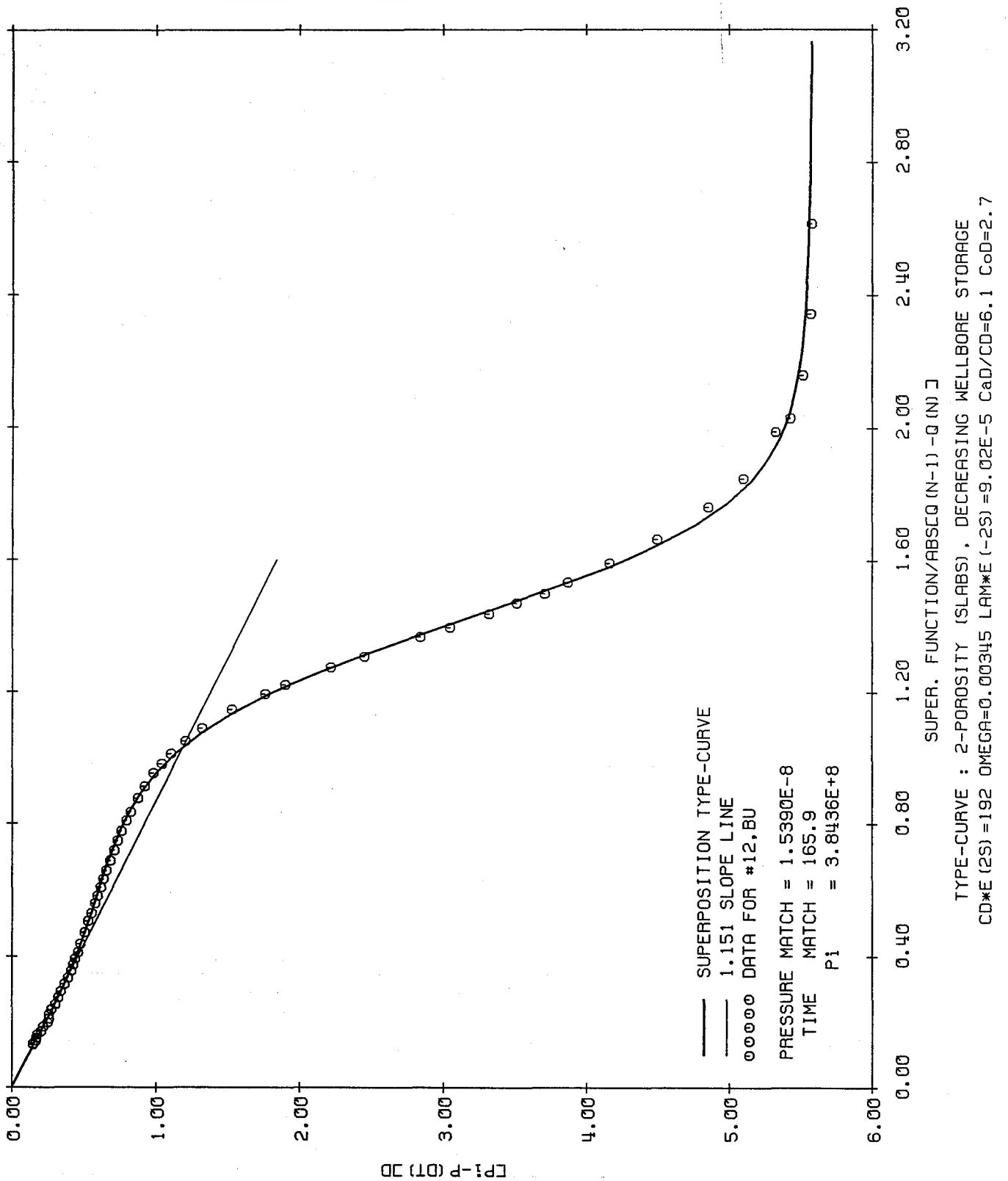

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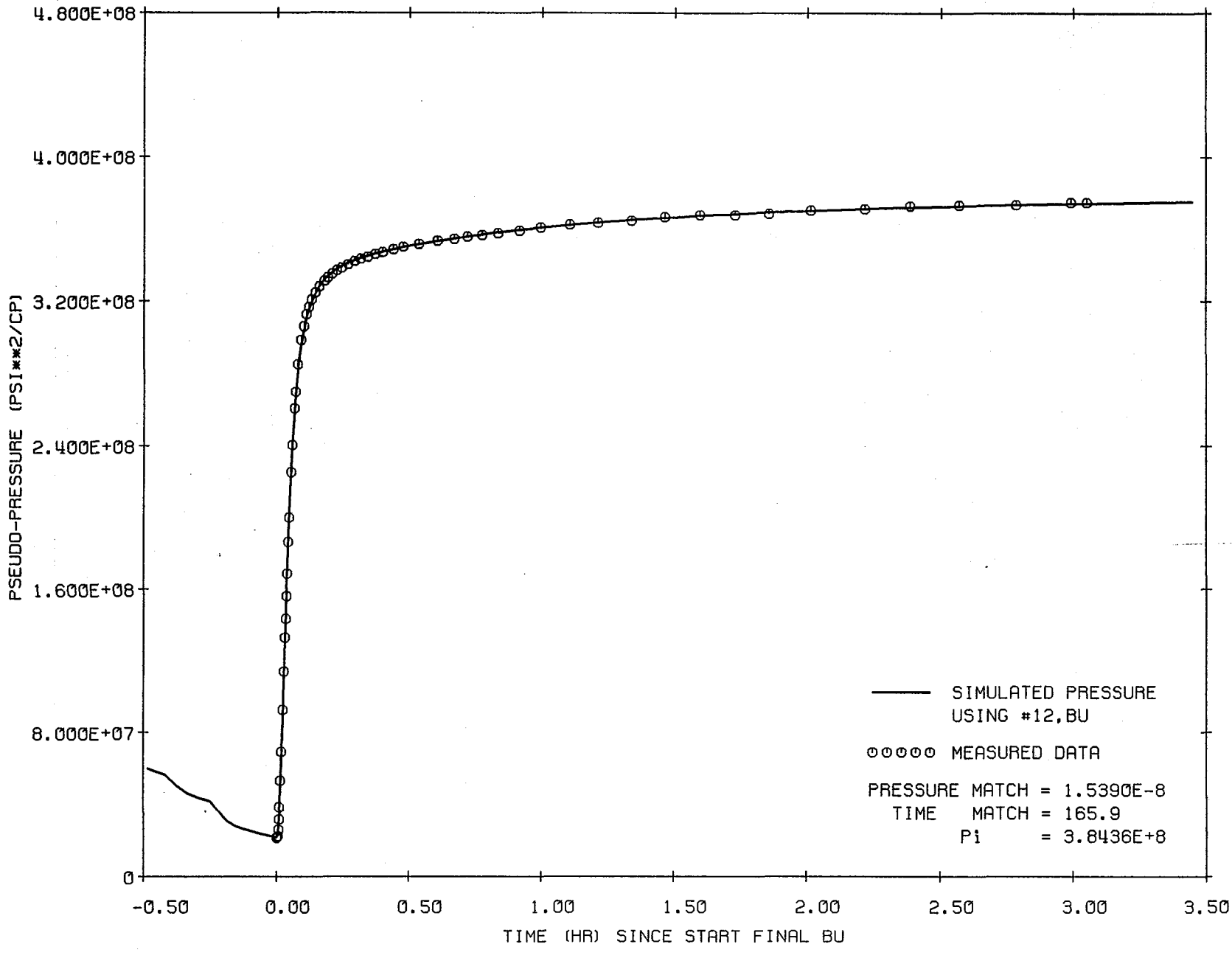
PRESSURE HISTORY MATCH
SIMULATION



TYPE-CURVE : 2-POROSITY (SLABS), DECREASING WELLBORE STORAGE
CD*E(2S) =192 OMEGA=0.00345 LAM*E(-2S) =9.02E-5 CaD/CD=6.1 CoD=2.7

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INFINITE-ACTING RADIAL FLOW
ANALYSIS: SUPERPOSITION PLOT
FOR #12,BU

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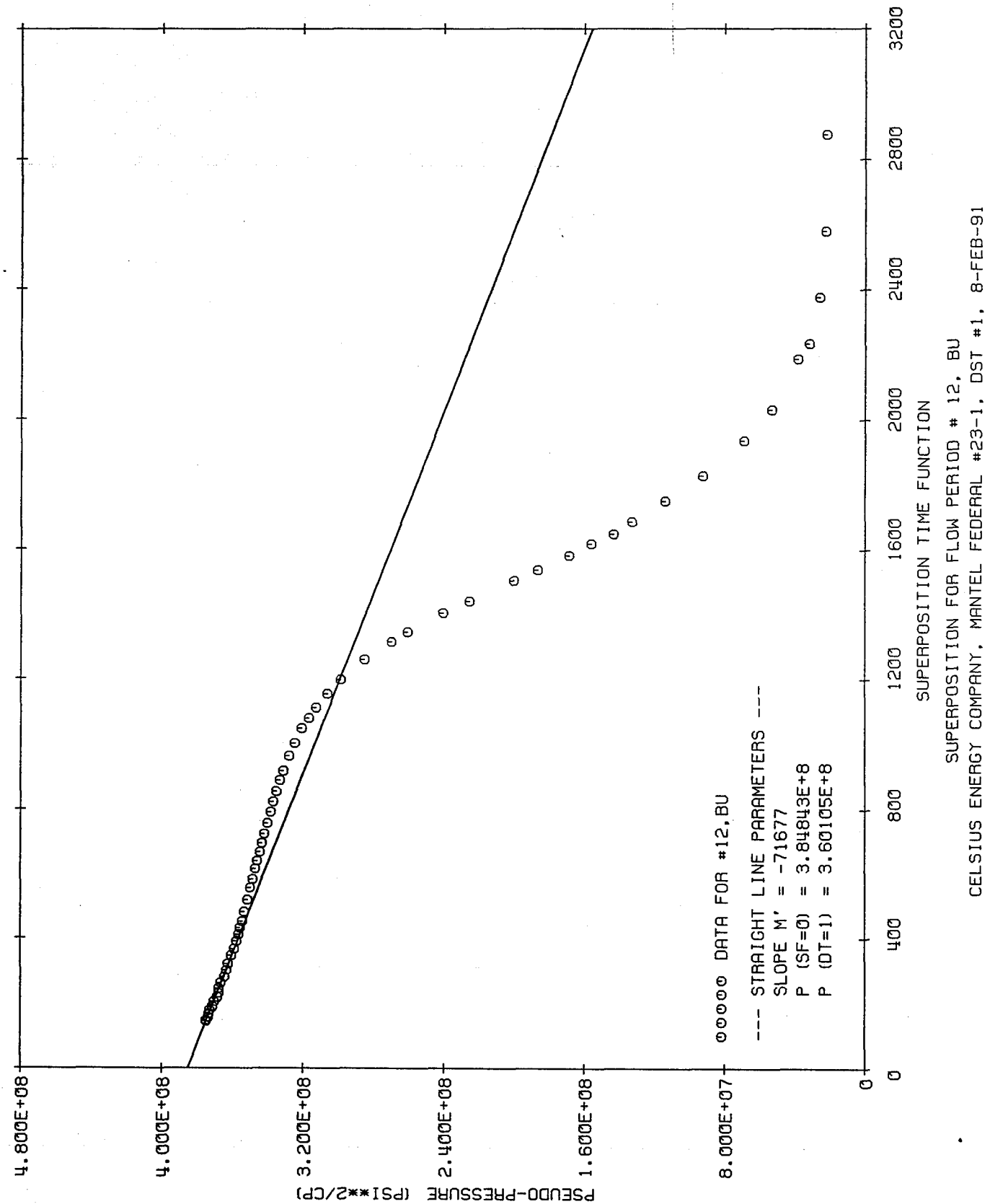

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PAGE NO. 7

FLOW RATE DATA
USED IN ANALYSIS

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ET VS. FLOWRATE

USING GAS RATES COMPUTED FROM SURFACE PRESSURE & CHOKE SIZE
CELSIUS ENERGY COMPANY, MANTEL FEDERAL #23-1, DST #1, 8-FEB-91

	TIME (HR) SINCE START FINAL BU	GAS FLOWRATE (MSCF/D)
1	-2.0000	20.000
2	-1.9170	50.000
3	-1.8330	80.000
4	-1.7500	0.00000E-01
5	-1.2500	550.00
6	-1.0830	825.00
7	-0.91670	950.00
8	-0.75000	1000.0
9	-0.58330	1030.0
10	-0.41670	1060.0
11	-0.25000	1100.0
12	0.00000E-01	0.00000E-01

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SEQUENCE OF EVENTS

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DATE	TIME	DESCRIPTION	SURFACE CHOKE	SURFACE PRESSURE
2/8	17:29	SET PACKER		
1991	17:31	OPENED TOOL	1/8"	4 "
	17:36			50 PSI
	17:41			130 PSI
	17:46	CLOSED FOR INITIAL SHUT-IN		230 PSI
	18:16	FINISHED INITIAL SHUT-IN		
	18:18	RE-OPENED TOOL	3/8"	40 PSI
	18:23			130
	18:28			170
	18:33			220
	18:38			250
	18:43			263
	18:48			280
	18:53			290
	18:58			295
	19:03			300
	19:08			305
	19:13			309
	19:18			312
	19:23			315
	19:28	1100 MSCF/D GAS		318
	19:33	CLOSED FOR FINAL SHUT-IN		318 PSI
	22:33	FINISHED FINAL SHUT-IN		
	22:33	PULLED PACKER LOOSE		

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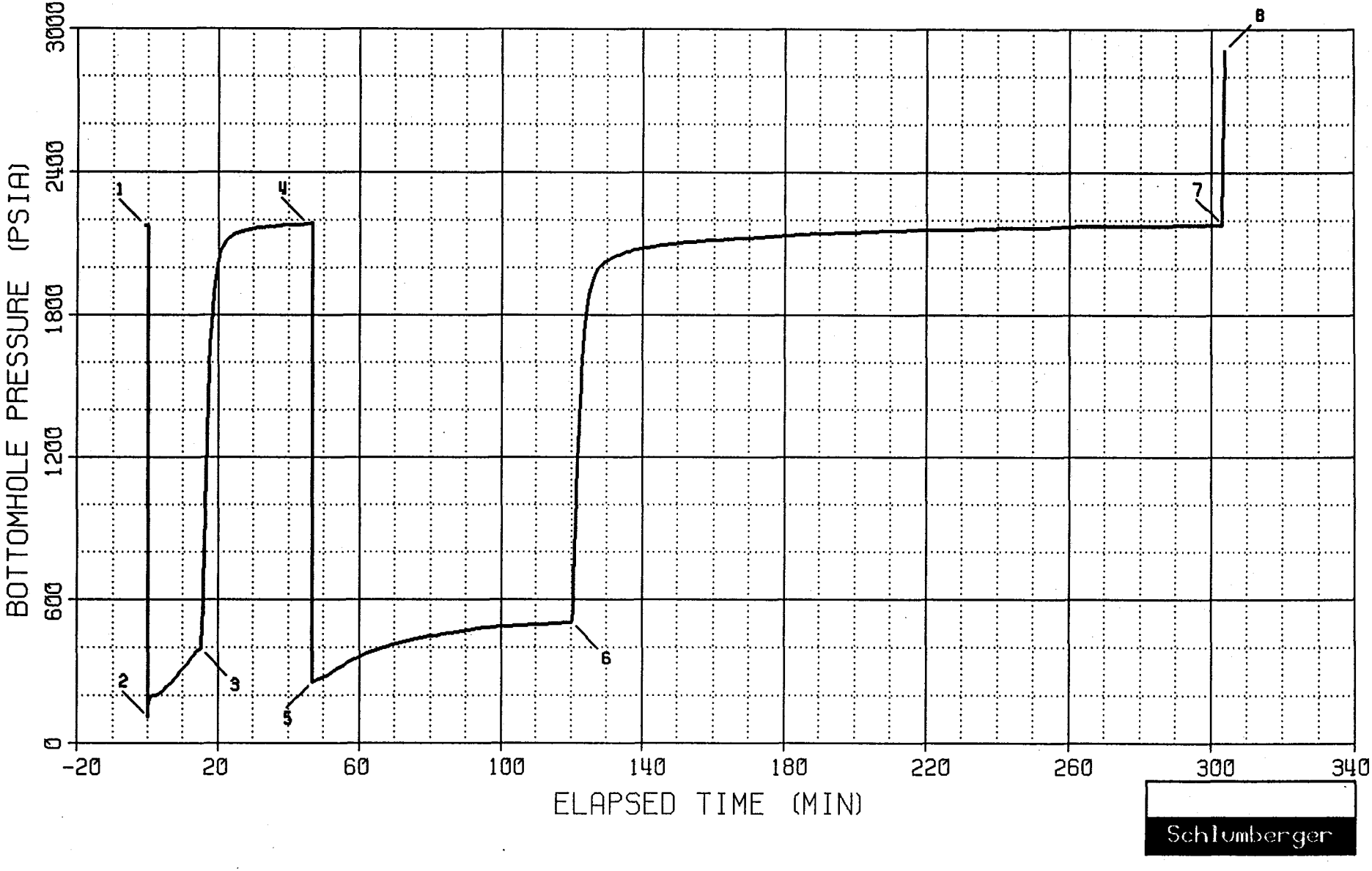
BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051
DEPTH : 6046 FT
CAPACITY : 6400 PSI
PORT OPENING : INSIDE

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1

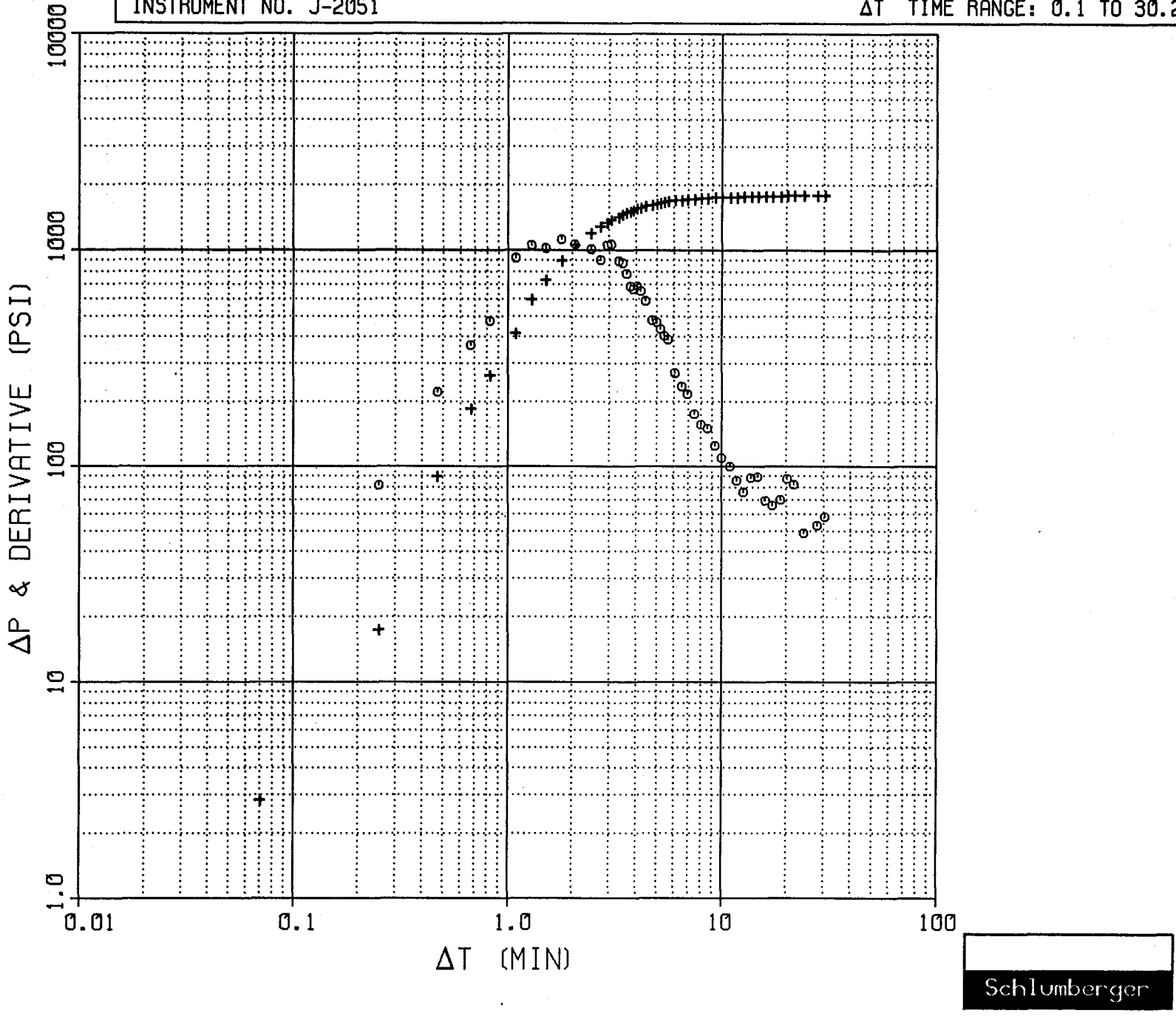
MECHANICAL RECORDER DATA

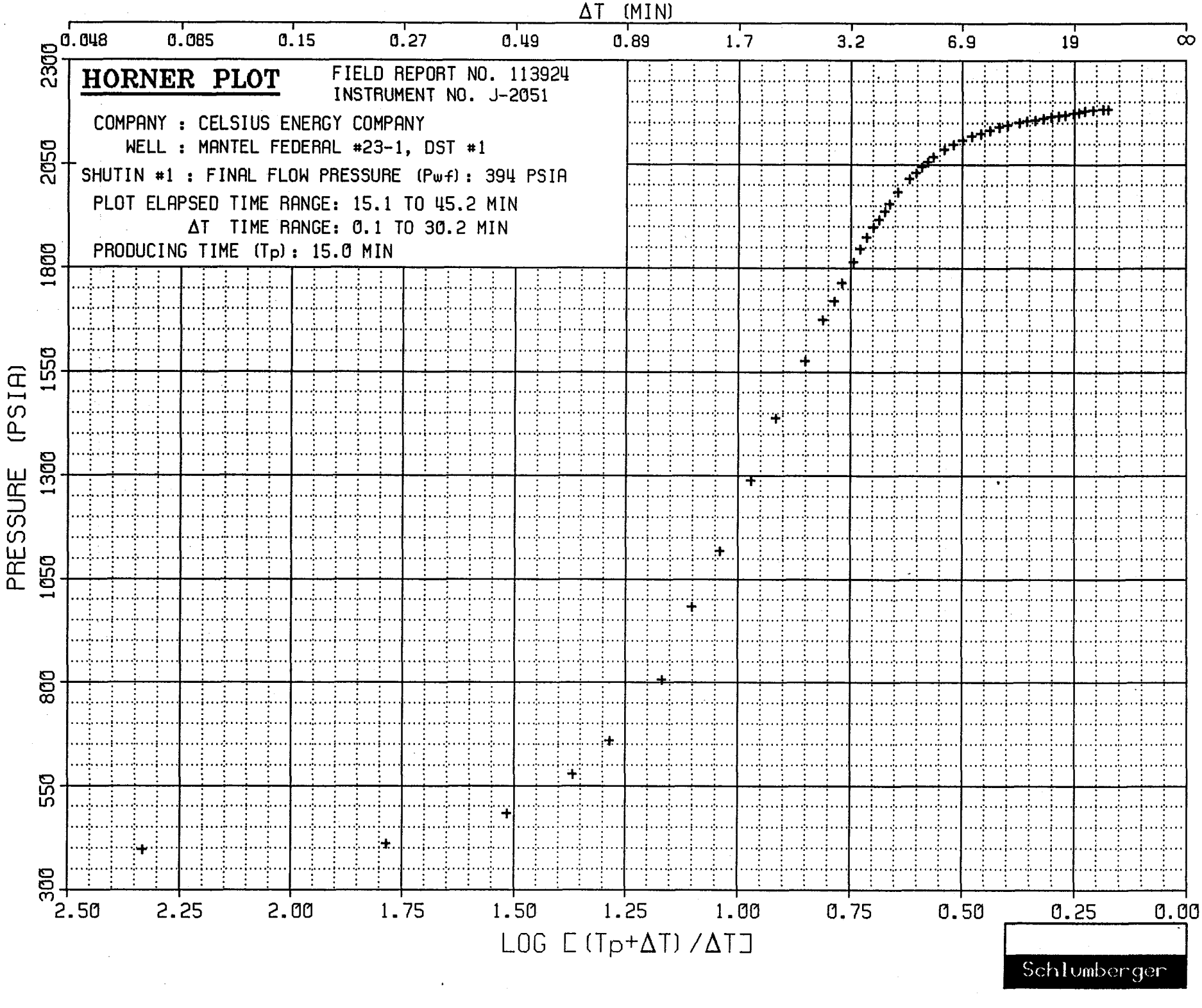


LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051

SHUTIN #1 : PRODUCING TIME (Tp): 15.0 MIN
FINAL FLOW PRESSURE (Pwf): 394 PSIA
PLOT ELAPSED TIME RANGE: 15.1 TO 45.2 MIN
ΔT TIME RANGE: 0.1 TO 30.2 MIN

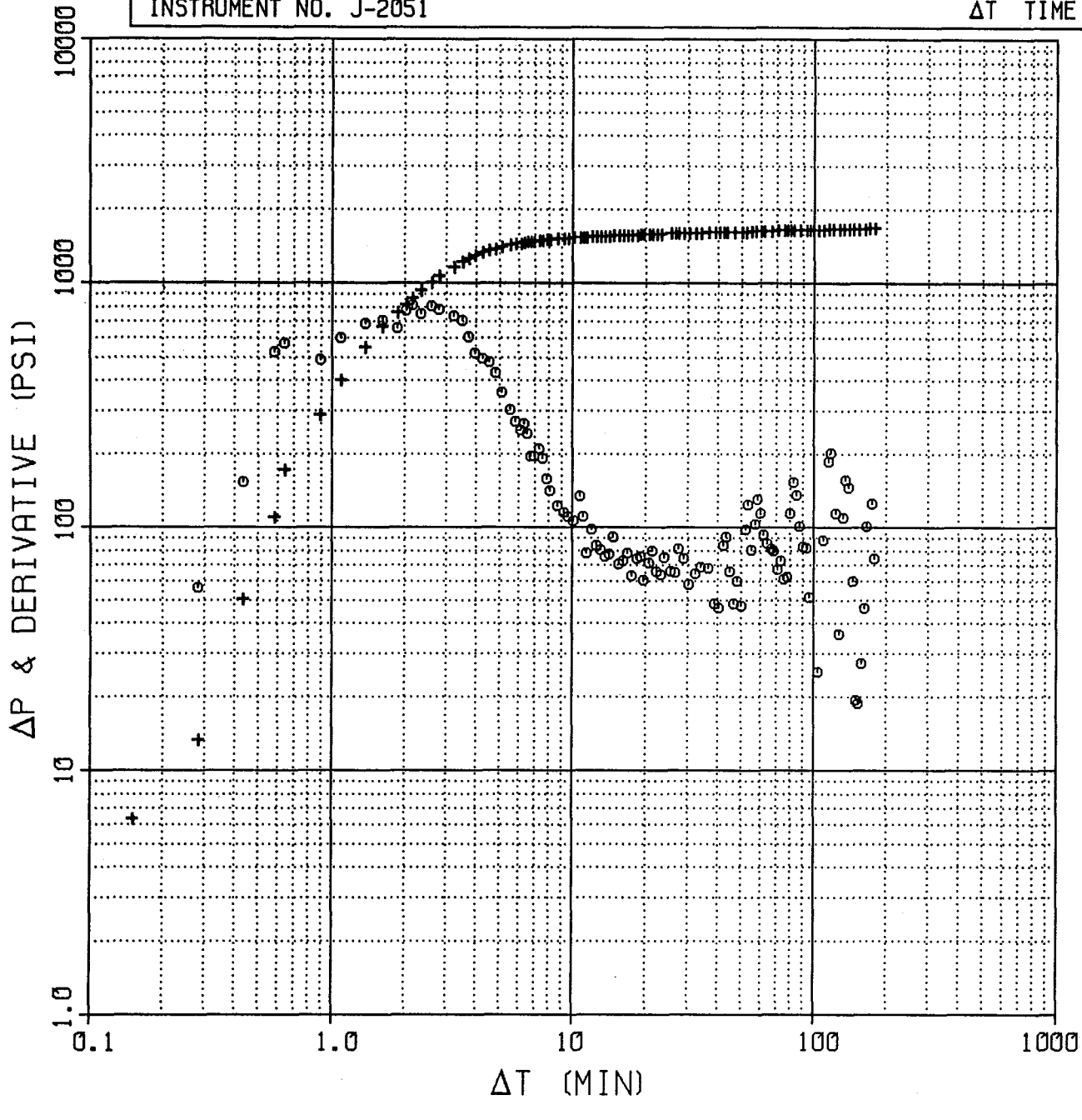



ΔT (MIN)
0.048
0.085
0.15
0.27
0.49
0.89
1.7
3.2
6.9
19
∞
HORNER PLOT
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
SHUTIN #1 : FINAL FLOW PRESSURE (Pwf) : 394 PSIA
PLOT ELAPSED TIME RANGE: 15.1 TO 45.2 MIN
ΔT TIME RANGE: 0.1 TO 30.2 MIN
PRODUCING TIME (Tp) : 15.0 MIN
PRESSURE (PSIA)
2300
2050
1800
1550
1300
1050
800
550
300
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
LOG [(Tp+ΔT)/ΔT]
Schlumberger

LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051

SHUTIN #2 : PRODUCING TIME (Tp): 88.2 MIN
FINAL FLOW PRESSURE (Pwf): 504 PSIA
PLOT ELAPSED TIME RANGE: 120.2 TO 303.0 MIN
ΔT TIME RANGE: 0.2 TO 183.0 MIN



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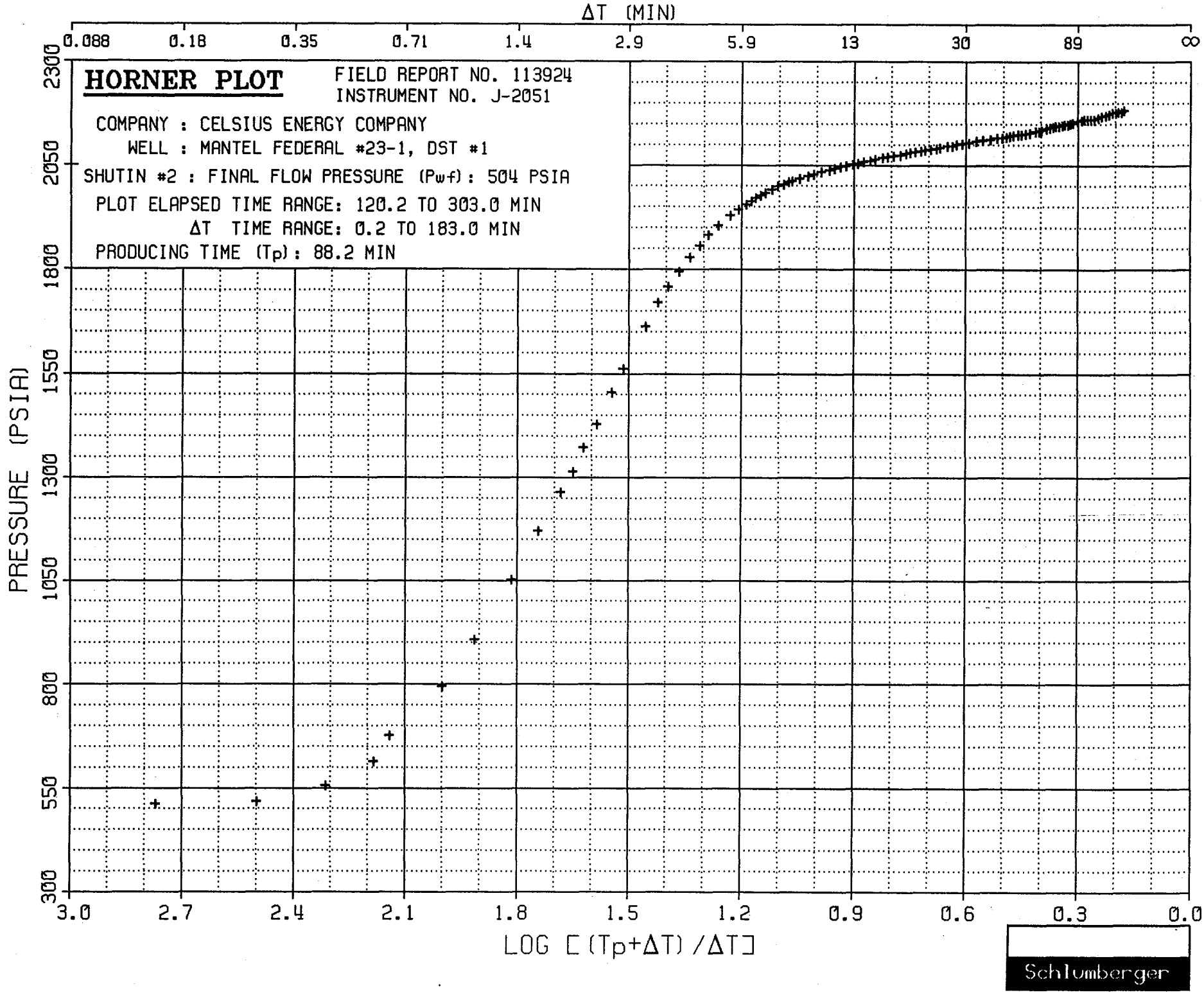
ΔT (MIN)
0.088
0.18
0.35
0.71
1.4
2.9
5.9
13
30
89
∞
HORNER PLOT
FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #23-1, DST #1
SHUTIN #2 : FINAL FLOW PRESSURE (Pwf) : 504 PSIA
PLOT ELAPSED TIME RANGE: 120.2 TO 303.0 MIN
ΔT TIME RANGE: 0.2 TO 183.0 MIN
PRODUCING TIME (Tp) : 88.2 MIN
PRESSURE (PSIA)
2300
2050
1800
1550
1300
1050
800
550
300
3.0
2.7
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.0
LOG [(Tp+ΔT)/ΔT]
Schlumberger

****
** WELL TEST DATA PRINTOUT **
****

COMPANY: CELSIUS ENERGY COMPANY
WELL: MANTEL FEDERAL #23-1, DST #1

FIELD REPORT NO. 113924
INSTRUMENT NO. J-2051

RECORDER CAPACITY: 6400 PSI PORT OPENING: INSIDE DEPTH: 6046 FT
TEMPERATURE: 124 DEG F

LABEL POINT INFORMATION
****

#	TIME OF DAY HH:MM:SS	DATE DD-MMM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	17:29:50	8-FEB	HYDROSTATIC MUD	-1.16	2176.5
2	17:31:00	8-FEB	START FLOW	0.00	109.5
3	17:46:00	8-FEB	END FLOW & START SHUT-IN	15.00	393.5
4	18:16:10	8-FEB	END SHUT-IN	45.17	2182.5
5	18:17:46	8-FEB	START FLOW	46.77	255.7
6	19:31:00	8-FEB	END FLOW & START SHUT-IN	120.00	504.5
7	22:34:00	8-FEB	END SHUT-IN	303.00	2181.6
8	22:34:50	8-FEB	HYDROSTATIC MUD	303.84	2912.3

SUMMARY OF FLOW PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	INITIAL PRESSURE PSIA
1	0.00	15.00	15.00	109.5	393.5	109.5
2	46.77	120.00	73.23	255.7	504.5	255.7

SUMMARY OF SHUTIN PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	15.00	45.17	30.17	393.5	2182.5	393.5	15.00
2	120.00	303.00	183.00	504.5	2181.6	504.5	88.23

TEST PHASE: FLOW PERIOD # 1

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
17:31:00	8-FEB	0.00	0.00	109.5
17:31:02	8-FEB	0.04	0.04	152.0
17:31:19	8-FEB	0.31	0.31	167.8
17:31:37	8-FEB	0.61	0.61	185.1
17:31:50	8-FEB	0.84	0.84	197.1
17:32:28	8-FEB	1.46	1.46	199.3
17:33:28	8-FEB	2.46	2.46	199.3
17:33:44	8-FEB	2.73	2.73	202.8
17:34:07	8-FEB	3.11	3.11	207.2
17:34:31	8-FEB	3.51	3.51	210.4
17:34:52	8-FEB	3.86	3.86	213.8
17:35:16	8-FEB	4.27	4.27	219.5
17:35:40	8-FEB	4.67	4.67	227.1
17:36:10	8-FEB	5.17	5.17	234.6
17:36:29	8-FEB	5.49	5.49	239.7
17:36:42	8-FEB	5.70	5.70	239.7
17:37:13	8-FEB	6.21	6.21	246.6
17:37:38	8-FEB	6.63	6.63	251.6
17:38:09	8-FEB	7.15	7.15	260.2
17:38:29	8-FEB	7.49	7.49	266.5
17:39:04	8-FEB	8.06	8.06	274.0
17:39:26	8-FEB	8.44	8.44	284.4
17:39:51	8-FEB	8.85	8.85	294.8
17:40:22	8-FEB	9.37	9.37	302.1
17:40:51	8-FEB	9.85	9.85	311.2
17:41:26	8-FEB	10.43	10.43	319.7
17:42:11	8-FEB	11.18	11.18	333.6
17:42:47	8-FEB	11.78	11.78	344.6
17:43:21	8-FEB	12.35	12.35	355.4
17:43:56	8-FEB	12.93	12.93	365.1
17:44:22	8-FEB	13.37	13.37	372.7
17:44:40	8-FEB	13.67	13.67	378.7
17:44:55	8-FEB	13.91	13.91	383.1
17:45:14	8-FEB	14.23	14.23	387.2
17:46:00	8-FEB	15.00	15.00	393.5

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 393.5 PSIA
PRODUCING TIME = 15.00 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
17:46:00	8-FEB	15.00	0.00	393.5	0.0	
17:46:04	8-FEB	15.07	0.07	396.4	2.8	2.3330
17:46:15	8-FEB	15.25	0.25	410.9	17.3	1.7853
17:46:28	8-FEB	15.47	0.47	482.4	88.9	1.5174
17:46:40	8-FEB	15.67	0.67	577.9	184.4	1.3690
17:46:49	8-FEB	15.82	0.82	657.4	263.9	1.2854
17:47:05	8-FEB	16.09	1.09	805.8	412.3	1.1691
17:47:17	8-FEB	16.29	1.29	983.7	590.1	1.1013

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 393.5 PSIA
PRODUCING TIME = 15.00 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
17:47:30	8-FEB	16.50	1.50	1118.3	724.7	1.0414
17:47:47	8-FEB	16.79	1.79	1288.8	895.3	0.9722
17:48:04	8-FEB	17.07	2.07	1438.5	1045.0	0.9163
17:48:27	8-FEB	17.45	2.45	1576.0	1182.5	0.8526
17:48:44	8-FEB	17.73	2.73	1672.8	1279.3	0.8125
17:48:56	8-FEB	17.93	2.93	1720.4	1326.9	0.7867
17:49:04	8-FEB	18.06	3.06	1764.2	1370.7	0.7710
17:49:18	8-FEB	18.30	3.30	1814.0	1420.5	0.7439
17:49:26	8-FEB	18.44	3.44	1845.8	1452.3	0.7292
17:49:35	8-FEB	18.59	3.59	1873.6	1480.1	0.7142
17:49:44	8-FEB	18.74	3.74	1898.8	1505.3	0.6999
17:49:53	8-FEB	18.88	3.88	1916.8	1523.3	0.6872
17:50:01	8-FEB	19.02	4.02	1936.6	1543.1	0.6750
17:50:10	8-FEB	19.17	4.17	1955.5	1562.0	0.6625
17:50:25	8-FEB	19.41	4.41	1983.3	1589.8	0.6436
17:50:46	8-FEB	19.76	4.76	2013.9	1620.3	0.6182
17:50:59	8-FEB	19.98	4.98	2029.3	1635.8	0.6034
17:51:11	8-FEB	20.18	5.18	2043.5	1650.0	0.5906
17:51:24	8-FEB	20.40	5.40	2055.5	1662.0	0.5772
17:51:37	8-FEB	20.61	5.61	2067.1	1673.6	0.5651
17:52:04	8-FEB	21.07	6.07	2085.7	1692.2	0.5405
17:52:29	8-FEB	21.49	6.49	2096.5	1702.9	0.5200
17:52:55	8-FEB	21.92	6.92	2107.2	1713.7	0.5007
17:53:26	8-FEB	22.43	7.43	2116.3	1722.8	0.4798
17:54:00	8-FEB	23.00	8.00	2124.2	1730.7	0.4586
17:54:37	8-FEB	23.61	8.61	2131.4	1737.9	0.4381
17:55:17	8-FEB	24.28	9.28	2138.4	1744.9	0.4177
17:55:57	8-FEB	24.95	9.95	2142.8	1749.3	0.3992
17:56:58	8-FEB	25.96	10.96	2149.4	1755.9	0.3745
17:57:44	8-FEB	26.73	11.73	2152.9	1759.4	0.3577
17:58:41	8-FEB	27.68	12.68	2156.4	1762.8	0.3390
17:59:48	8-FEB	28.80	13.80	2159.5	1766.0	0.3195
18:00:49	8-FEB	29.82	14.82	2163.3	1769.8	0.3037
18:02:00	8-FEB	31.00	16.00	2166.1	1772.6	0.2872
18:03:12	8-FEB	32.20	17.20	2168.3	1774.8	0.2723
18:04:52	8-FEB	33.86	18.86	2171.2	1777.7	0.2541
18:06:15	8-FEB	35.25	20.25	2173.4	1779.9	0.2407
18:07:47	8-FEB	36.79	21.79	2176.5	1783.0	0.2275
18:10:11	8-FEB	39.19	24.19	2178.7	1785.2	0.2095
18:13:52	8-FEB	42.86	27.86	2180.9	1787.4	0.1871
18:16:10	8-FEB	45.17	30.17	2182.5	1789.0	0.1753

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
18:17:46	8-FEB	46.77	0.00	255.7
18:21:31	8-FEB	50.51	3.74	280.0

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
18:22:27	8-FEB	51.45	4.68	289.2
18:23:35	8-FEB	52.58	5.81	300.5
18:24:42	8-FEB	53.70	6.93	310.9
18:25:50	8-FEB	54.84	8.07	321.3
18:27:07	8-FEB	56.12	9.35	332.4
18:28:25	8-FEB	57.41	10.64	342.8
18:29:35	8-FEB	58.59	11.82	351.3
18:31:00	8-FEB	60.00	13.23	361.0
18:32:28	8-FEB	61.46	14.69	371.1
18:34:02	8-FEB	63.04	16.27	380.0
18:35:27	8-FEB	64.45	17.68	386.9
18:37:01	8-FEB	66.01	19.24	395.1
18:38:55	8-FEB	67.91	21.14	403.6
18:40:17	8-FEB	69.28	22.51	410.9
18:41:29	8-FEB	70.48	23.71	417.5
18:43:32	8-FEB	72.53	25.76	425.0
18:44:55	8-FEB	73.92	27.15	429.1
18:46:37	8-FEB	75.62	28.85	435.1
18:48:33	8-FEB	77.55	30.78	441.1
18:50:26	8-FEB	79.44	32.67	446.2
18:52:08	8-FEB	81.14	34.37	449.9
18:53:38	8-FEB	82.64	35.87	452.5
18:53:54	8-FEB	82.90	36.13	455.0
18:54:41	8-FEB	83.68	36.91	455.0
18:55:50	8-FEB	84.84	38.07	458.5
18:56:44	8-FEB	85.73	38.96	461.9
18:58:16	8-FEB	87.27	40.50	465.1
18:59:45	8-FEB	88.75	41.98	468.2
19:01:19	8-FEB	90.32	43.55	472.3
19:02:52	8-FEB	91.87	45.10	475.8
19:04:07	8-FEB	93.12	46.35	478.6
19:06:17	8-FEB	95.28	48.51	482.4
19:08:14	8-FEB	97.24	50.47	485.2
19:10:37	8-FEB	99.62	52.85	487.5
19:12:59	8-FEB	101.98	55.21	489.4
19:15:49	8-FEB	104.82	58.05	492.2
19:17:58	8-FEB	106.96	60.19	493.4
19:19:23	8-FEB	108.38	61.61	494.7
19:21:48	8-FEB	110.80	64.03	496.0
19:23:22	8-FEB	112.37	65.60	497.9
19:25:40	8-FEB	114.67	67.90	499.4
19:27:34	8-FEB	116.57	69.80	501.0
19:28:48	8-FEB	117.80	71.03	502.6
19:30:42	8-FEB	119.70	72.93	503.9
19:31:00	8-FEB	120.00	73.23	504.5

TEST PHASE: SHUTIN PERIOD # 2 FINAL FLOW PRESSURE = 504.5 PSIA
PRODUCING TIME = 88.23 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
19:31:00	8-FEB	120.00	0.00	504.5	0.0	
19:31:09	8-FEB	120.15	0.15	510.8	6.3	2.7703
19:31:17	8-FEB	120.28	0.28	517.7	13.2	2.4998
19:31:26	8-FEB	120.43	0.43	554.9	50.4	2.3143
19:31:35	8-FEB	120.58	0.58	614.2	109.7	2.1850
19:31:38	8-FEB	120.64	0.64	676.0	171.5	2.1426
19:31:53	8-FEB	120.89	0.89	794.8	290.3	2.0006
19:32:05	8-FEB	121.09	1.09	907.0	402.6	1.9135
19:32:22	8-FEB	121.37	1.37	1051.7	547.3	1.8156
19:32:37	8-FEB	121.62	1.62	1169.3	664.8	1.7440
19:32:52	8-FEB	121.86	1.86	1264.2	759.7	1.6852
19:33:01	8-FEB	122.02	2.02	1314.7	810.2	1.6501
19:33:10	8-FEB	122.16	2.16	1373.0	868.5	1.6217
19:33:20	8-FEB	122.34	2.34	1428.8	924.3	1.5878
19:33:35	8-FEB	122.58	2.58	1504.4	1000.0	1.5465
19:33:46	8-FEB	122.77	2.77	1560.2	1055.7	1.5166
19:34:12	8-FEB	123.20	3.20	1661.1	1156.6	1.4559
19:34:28	8-FEB	123.47	3.47	1718.8	1214.3	1.4220
19:34:41	8-FEB	123.69	3.69	1758.5	1254.0	1.3964
19:34:58	8-FEB	123.96	3.96	1794.1	1289.7	1.3670
19:35:14	8-FEB	124.24	4.24	1827.2	1322.8	1.3386
19:35:31	8-FEB	124.52	4.52	1856.2	1351.8	1.3122
19:35:47	8-FEB	124.78	4.78	1881.5	1377.0	1.2891
19:36:05	8-FEB	125.09	5.09	1904.5	1400.0	1.2633
19:36:31	8-FEB	125.51	5.51	1928.4	1424.0	1.2308
19:36:49	8-FEB	125.82	5.82	1943.6	1439.1	1.2084
19:37:05	8-FEB	126.09	6.09	1954.3	1449.8	1.1900
19:37:18	8-FEB	126.30	6.30	1962.2	1457.7	1.1762
19:37:30	8-FEB	126.50	6.50	1970.4	1465.9	1.1636
19:37:43	8-FEB	126.72	6.72	1976.7	1472.2	1.1501
19:37:56	8-FEB	126.94	6.94	1982.3	1477.9	1.1371
19:38:15	8-FEB	127.25	7.25	1990.5	1486.1	1.1196
19:38:32	8-FEB	127.53	7.53	1998.1	1493.6	1.1044
19:38:49	8-FEB	127.81	7.81	2003.8	1499.3	1.0898
19:39:05	8-FEB	128.09	8.09	2008.5	1504.0	1.0758
19:39:17	8-FEB	128.28	8.28	2011.3	1506.9	1.0665
19:39:41	8-FEB	128.69	8.69	2017.0	1512.5	1.0474
19:40:12	8-FEB	129.20	9.20	2023.0	1518.5	1.0249
19:40:34	8-FEB	129.57	9.57	2027.1	1522.6	1.0094
19:41:06	8-FEB	130.10	10.10	2032.2	1527.7	0.9884
19:41:43	8-FEB	130.71	10.71	2037.8	1533.3	0.9656
19:42:03	8-FEB	131.05	11.05	2041.9	1537.4	0.9535
19:42:29	8-FEB	131.48	11.48	2044.1	1539.6	0.9388
19:42:59	8-FEB	131.98	11.98	2047.6	1543.1	0.9225
19:43:32	8-FEB	132.53	12.53	2051.7	1547.2	0.9053
19:44:01	8-FEB	133.01	13.01	2053.9	1549.4	0.8911
19:44:34	8-FEB	133.57	13.57	2057.4	1552.9	0.8752
19:45:13	8-FEB	134.22	14.22	2059.6	1555.1	0.8576
19:45:44	8-FEB	134.73	14.73	2062.4	1557.9	0.8445
19:46:34	8-FEB	135.57	15.57	2066.5	1562.0	0.8239

TEST PHASE: SHUTIN PERIOD # 2 FINAL FLOW PRESSURE = 504.5 PSIA
PRODUCING TIME = 88.23 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
19:47:10	8-FEB	136.16	16.16	2068.4	1563.9	0.8102
19:47:52	8-FEB	136.87	16.87	2071.6	1567.1	0.7945
19:48:38	8-FEB	137.63	17.63	2074.1	1569.6	0.7785
19:49:28	8-FEB	138.46	18.46	2076.3	1571.8	0.7619
19:50:03	8-FEB	139.05	19.05	2078.5	1574.0	0.7506
19:50:44	8-FEB	139.74	19.74	2080.4	1575.9	0.7380
19:51:35	8-FEB	140.58	20.58	2082.3	1577.8	0.7232
19:52:16	8-FEB	141.27	21.27	2084.5	1580.0	0.7116
19:53:17	8-FEB	142.29	22.29	2087.3	1582.8	0.6953
19:54:15	8-FEB	143.25	23.25	2089.2	1584.7	0.6808
19:54:56	8-FEB	143.94	23.94	2090.8	1586.3	0.6708
19:56:18	8-FEB	145.30	25.30	2094.6	1590.1	0.6520
19:57:22	8-FEB	146.37	26.37	2096.1	1591.7	0.6381
19:58:22	8-FEB	147.36	27.36	2098.4	1593.9	0.6258
19:59:35	8-FEB	148.59	28.59	2101.2	1596.7	0.6113
20:01:14	8-FEB	150.24	30.24	2103.7	1599.2	0.5930
20:03:09	8-FEB	152.15	32.15	2106.2	1601.7	0.5734
20:04:56	8-FEB	153.94	33.94	2109.1	1604.6	0.5563
20:07:20	8-FEB	156.34	36.34	2112.2	1607.7	0.5350
20:09:29	8-FEB	158.49	38.49	2115.1	1610.6	0.5175
20:11:09	8-FEB	160.15	40.15	2116.0	1611.5	0.5048
20:12:45	8-FEB	161.75	41.75	2117.6	1613.1	0.4932
20:14:05	8-FEB	163.09	43.09	2119.8	1615.3	0.4840
20:15:22	8-FEB	164.37	44.37	2121.4	1616.9	0.4755
20:17:28	8-FEB	166.46	46.46	2122.6	1618.1	0.4623
20:18:47	8-FEB	167.78	47.78	2123.6	1619.1	0.4543
20:21:04	8-FEB	170.06	50.06	2125.8	1621.3	0.4413
20:24:13	8-FEB	173.21	53.21	2128.6	1624.1	0.4246
20:27:41	8-FEB	176.69	56.69	2131.8	1627.3	0.4076
20:30:43	8-FEB	179.71	59.71	2135.9	1631.4	0.3940
20:34:35	8-FEB	183.59	63.59	2139.3	1634.9	0.3779
20:39:02	8-FEB	188.03	68.03	2142.5	1638.0	0.3611
20:43:37	8-FEB	192.62	72.62	2145.0	1640.5	0.3454
20:48:32	8-FEB	197.54	77.54	2147.2	1642.7	0.3300
20:53:41	8-FEB	202.69	82.69	2151.0	1646.5	0.3153
20:58:44	8-FEB	207.73	87.73	2155.1	1650.6	0.3023
21:03:39	8-FEB	212.65	92.65	2157.3	1652.8	0.2905
21:10:12	8-FEB	219.20	99.20	2158.9	1654.4	0.2763
21:16:53	8-FEB	225.88	105.88	2159.5	1655.0	0.2632
21:22:20	8-FEB	231.33	111.33	2161.1	1656.6	0.2535
21:29:11	8-FEB	238.19	118.19	2165.5	1661.0	0.2422
21:34:47	8-FEB	243.78	123.78	2169.0	1664.5	0.2337
21:43:53	8-FEB	252.88	132.88	2169.9	1665.4	0.2211
21:50:46	8-FEB	259.77	139.77	2173.1	1668.6	0.2125
21:57:39	8-FEB	266.65	146.65	2176.2	1671.7	0.2046
22:05:08	8-FEB	274.13	154.13	2176.5	1672.1	0.1966
22:13:50	8-FEB	282.84	162.84	2177.2	1672.7	0.1880
22:21:40	8-FEB	290.67	170.67	2178.4	1673.9	0.1810
22:30:28	8-FEB	299.46	179.46	2181.6	1677.1	0.1737
22:34:00	8-FEB	303.00	183.00	2181.6	1677.1	0.1709

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PAGE NO. 1

TEST DATE: 10-FEB-1991

S T A R

Schlumberger Pressure Data Report

Based on a MFE-OH Drillstem Test

Schlumberger

43-037-31564 dul

COMPANY: CELSIUS ENERGY COMPANY

WELL: MANTEL FEDERAL #23-1, DST #2

TEST IDENTIFICATION

Test Type	MFE-OH DST
Test No.	2
Formation	UPPER ISMAY
Test Interval (ft)	6094 - 6133
Depth Reference	GR

WELL LOCATION

Field	WILDCAT
County	SAN JUAN
State	UTAH
Sec/Twn/Rng	S23 T37S R23E
Elevation (ft)	5777

HOLE CONDITIONS

Total Depth (MD/TVD) (ft)	6133 / 6103
Open Hole Size (in)	7 7/8
Casing/Liner I.D. (in)	
Net Productive Interval (ft)	

MUD PROPERTIES

Mud Type	L.S.N.O.
Mud Weight (lb/gal)	8.9
Mud Resistivity (ohm.m)	3.0 @ 68F
Filtrate Resistivity (ohm.m)	3.1 @ 68F
Filtrate Chlorides (ppm)	2000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi)	2892
Gas Cushion Type	NONE
Surface Pressure (psi)	
Liquid Cushion Type	NONE
Cushion Length (ft)	

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in)	5442 / 3.80
Collar Length (ft)/I.D. (in)	612 / 2.25
Packer Depth (ft)	6094
Bottomhole Choke Size (in)	15/16
Gauge Depth (ft)/Type	6100 / J-2051

NET PIPE RECOVERY

Volume	Fluid Type	Properties
300 FT	TOP: MUD	WATER/GAS/OIL CUT
		8.7# .65@68F 9800ppm
	MID: MUD	WATER CUT
		9# .18@68F 39800 ppm
273 FT	BOT: WATER	9.4# 71200 ppm

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
0.7 CU.FT	GAS	
30 CC	EMULSION	
1800 CC	WATER	95000 ppm
		0.085 RESISTIVITY
Pressure: 325	GOR:	GLR:

INTERPRETATION RESULTS

Model of Behavior	N/A
Fluid Type Used for Analysis	
Reservoir Pressure (psi)	
Transmissibility (md.ft/cp)	
Effective Permeability (md)	
Skin Factor	
Well.Storage Coef. (bbl/psi)	
Radius of Investigation (ft)	

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API)	
Basic Solids (%)	
Gas Gravity	
GOR (scf/STB)	
Water Cut (%)	
Viscosity (cp)	
Total Compressibility (1/psi)	
Porosity (%)	
Reservoir Temperature (F)	128 @ 6100 FT

PRODUCTION RATE DURING TEST: -

COMMENTS:

THIS REPORT CONTAINS THE PRESSURE DATA FROM AN OPEN-HOLE DRILLSTEM TEST. THE TEST WAS MECHANICALLY SUCCESSFUL. THE ZONE PRODUCED A TOTAL OF 573 FT OF FLUID INTO THE TEST STRING. THE FLUID WAS MUD AND WATER, GAS CUT.

REPORT NO. 113925
PAGE NO. 2

SEQUENCE OF EVENTS

Schlumberger

DATE	TIME	DESCRIPTION	SURFACE CHOKE	SURFACE PRESSURE
2/10	05:45	SET PACKER		
1991	05:47	OPENED TOOL; 1" BLOW IN BUCKET	1/8"	
	05:52	10" BLOW IN BUCKET		
	05:57			1 PSI
	06:02	CLOSED FOR INITIAL SHUT-IN		1 PSI
	06:32	FINISHED INITIAL SHUT-IN		
	06:34	RE-OPENED TOOL; SLIGHT BLOW		
	06:39			3 "
	06:44			5 "
	06:49			7 "
	06:54			9 "
	06:59			7.0 OZ
	07:04			7.5 OZ
	07:09			8.5 OZ
	07:14			9.5 OZ
	07:19			10.5 OZ
	07:24			11.5 OZ
	07:29			12.5 OZ
	07:34	CLOSED FOR FINAL SHUT-IN		13.5 OZ
	10:34	FINISHED FINAL SHUT-IN		
	10:37	PULLED PACKER LOOSE		

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PAGE NO. 3

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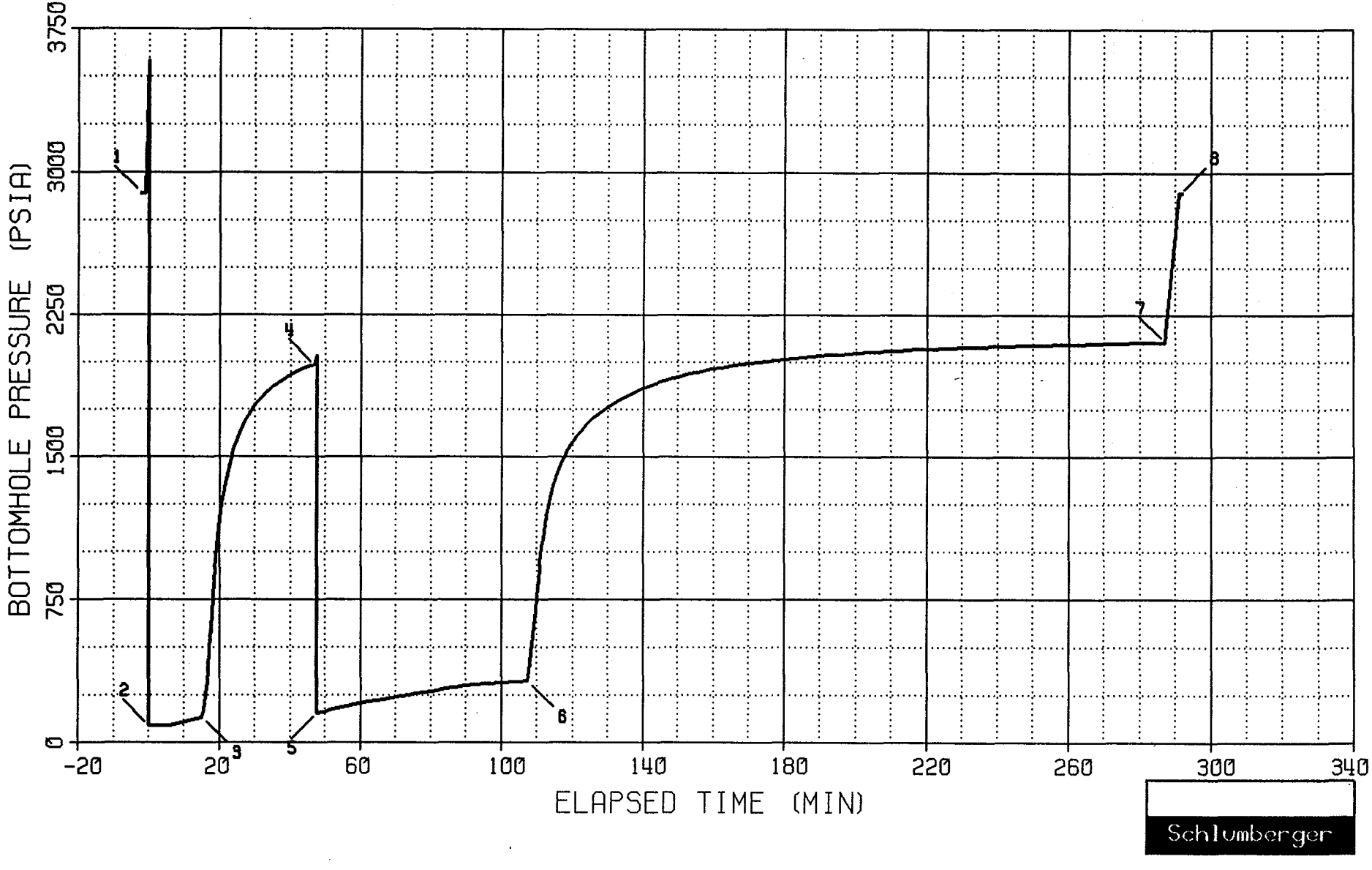
BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051
DEPTH : 6100 FT
CAPACITY : 6400 PSI
PORT OPENING : INSIDE

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2

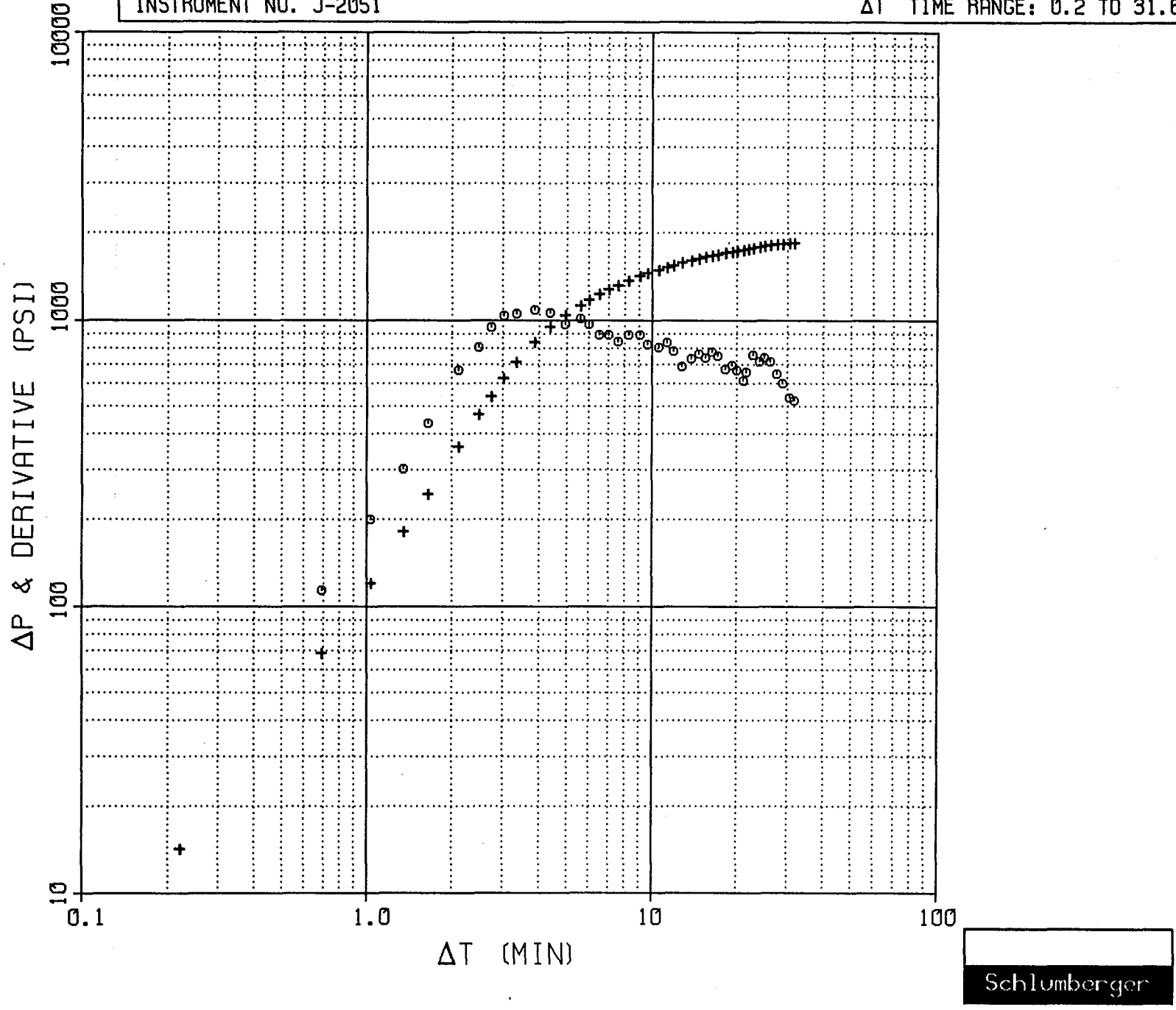
MECHANICAL RECORDER DATA

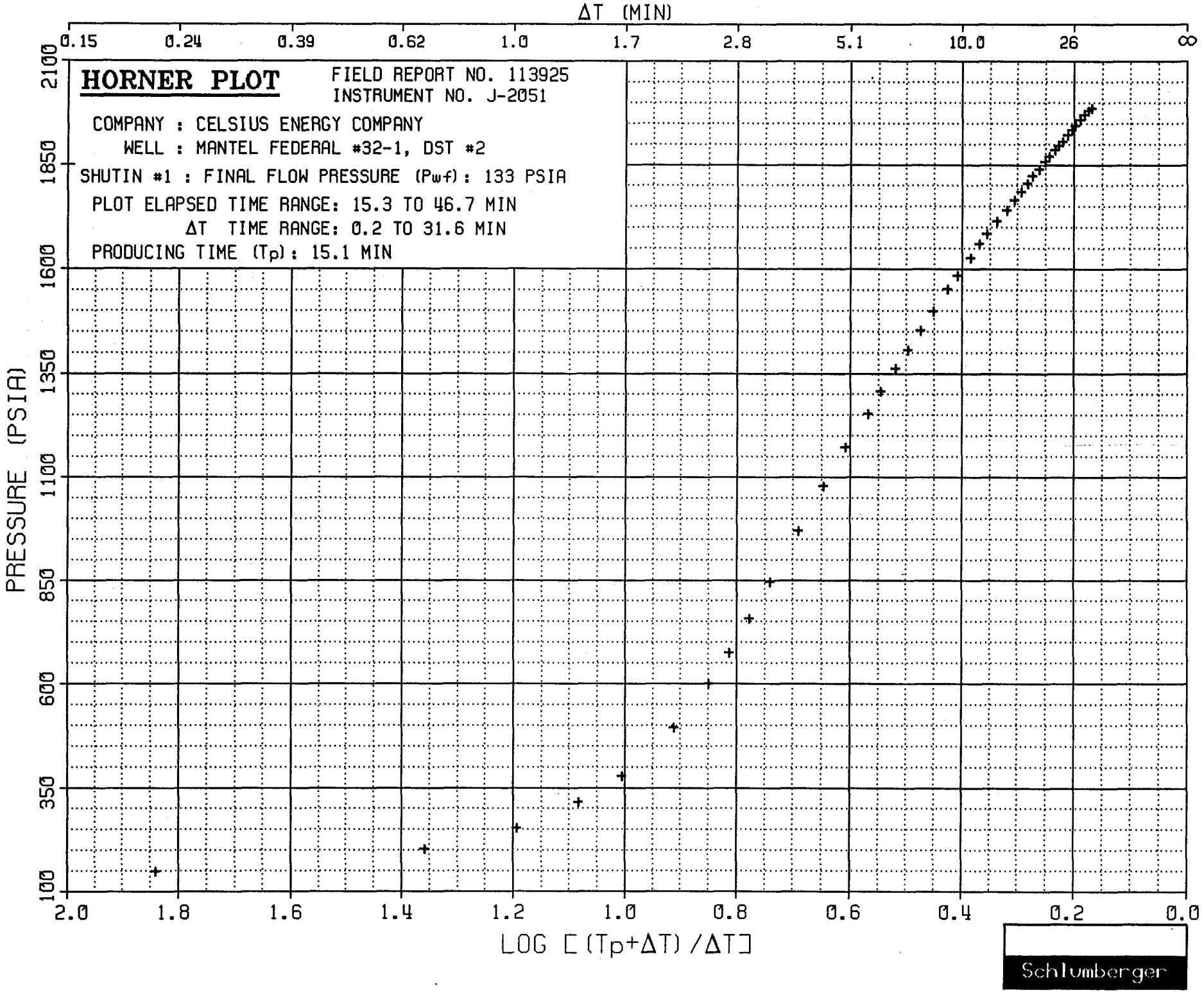


LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051

SHUTIN #1 : PRODUCING TIME (Tp): 15.1 MIN
FINAL FLOW PRESSURE (Pwf): 133 PSIA
PLOT ELAPSED TIME RANGE: 15.3 TO 46.7 MIN
ΔT TIME RANGE: 0.2 TO 31.6 MIN

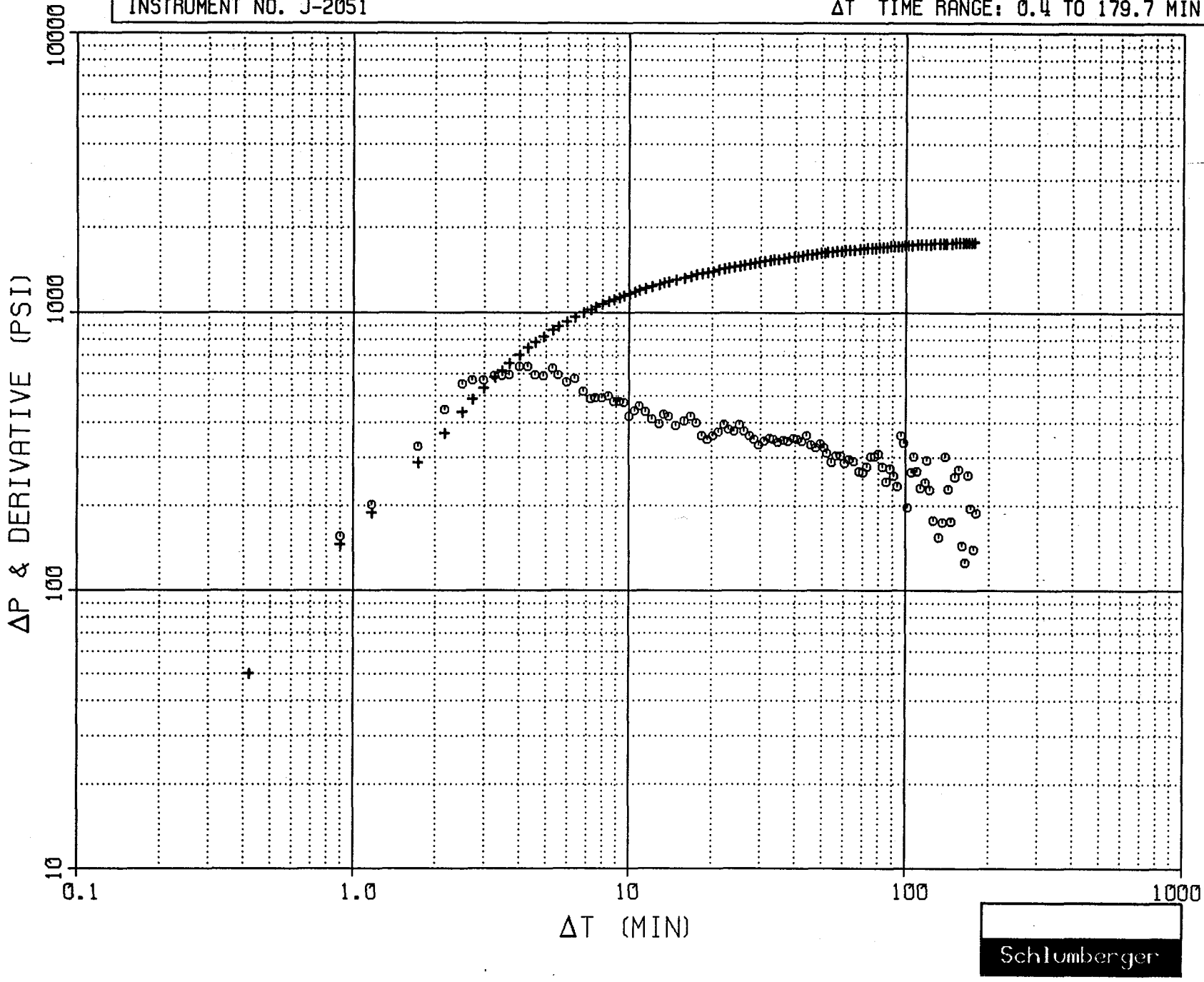


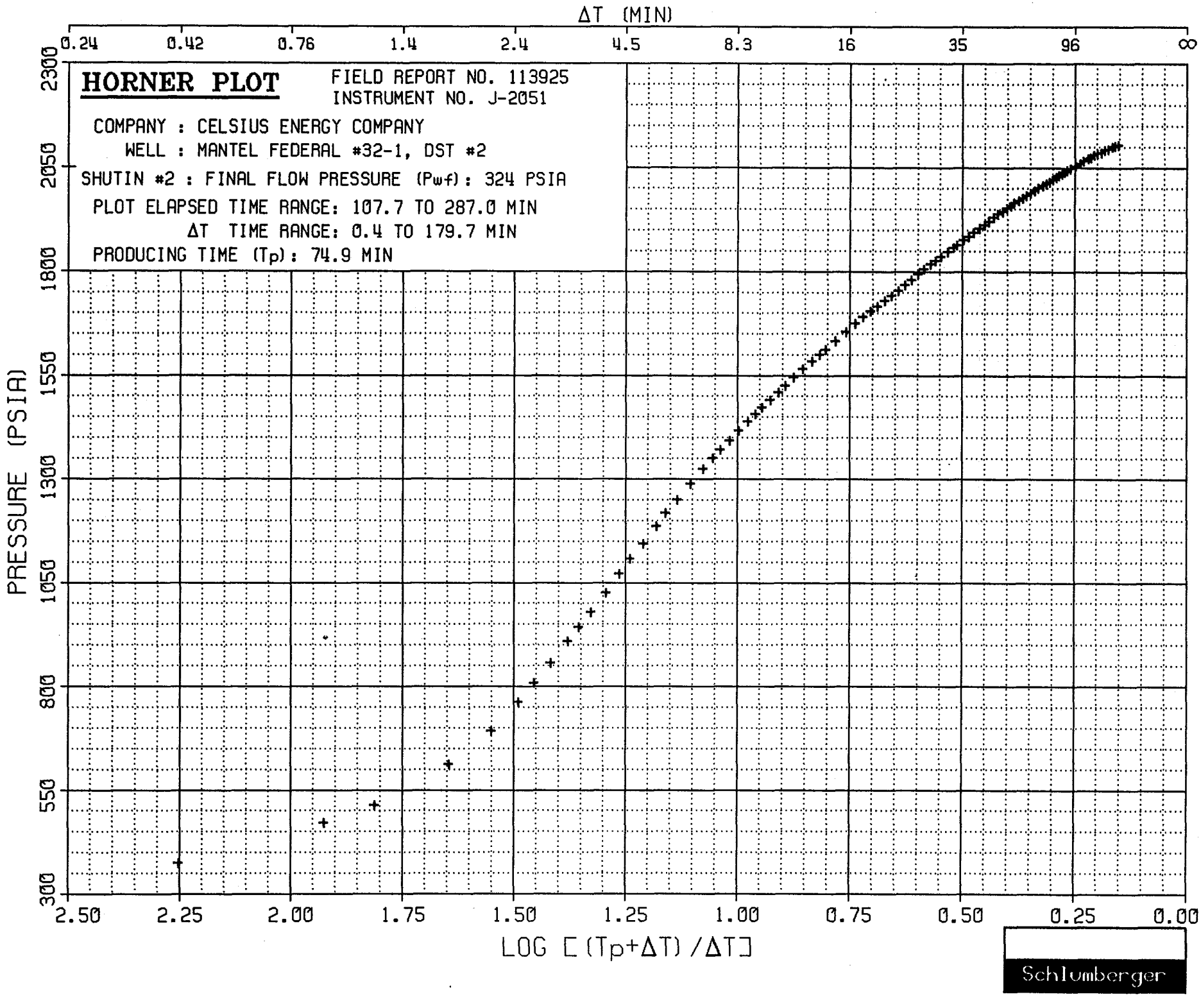

ΔT (MIN)
0.15
0.24
0.39
0.62
1.0
1.7
2.8
5.1
10.0
26
∞
HORNER PLOT
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
SHUTIN #1 : FINAL FLOW PRESSURE (Pwf) : 133 PSIA
PLOT ELAPSED TIME RANGE: 15.3 TO 46.7 MIN
ΔT TIME RANGE: 0.2 TO 31.6 MIN
PRODUCING TIME (Tp) : 15.1 MIN
PRESSURE (PSIA)
2100
1850
1600
1350
1100
850
600
350
100
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
LOG [(Tp+ΔT)/ΔT]
Schlumberger

LOG LOG PLOT

COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051

SHUTIN #2 : PRODUCING TIME (Tp): 74.9 MIN
FINAL FLOW PRESSURE (Pwf): 324 PSIA
PLOT ELAPSED TIME RANGE: 107.7 TO 287.0 MIN
ΔT TIME RANGE: 0.4 TO 179.7 MIN




ΔT (MIN)
0.24
0.42
0.76
1.4
2.4
4.5
8.3
16
35
96
∞
HORNER PLOT
FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051
COMPANY : CELSIUS ENERGY COMPANY
WELL : MANTEL FEDERAL #32-1, DST #2
SHUTIN #2 : FINAL FLOW PRESSURE (Pwf) : 324 PSIA
PLOT ELAPSED TIME RANGE: 107.7 TO 287.0 MIN
ΔT TIME RANGE: 0.4 TO 179.7 MIN
PRODUCING TIME (Tp) : 74.9 MIN
PRESSURE (PSIA)
2300
2050
1800
1550
1300
1050
800
550
300
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
LOG [(Tp+ΔT)/ΔT]
Schlumberger

****
** WELL TEST DATA PRINTOUT **
****

COMPANY: CELSIUS ENERGY COMPANY
WELL: MANTEL FEDERAL #32-1, DST #2

FIELD REPORT NO. 113925
INSTRUMENT NO. J-2051

RECORDER CAPACITY: 6400 PSI PORT OPENING: INSIDE DEPTH: 6100 FT
TEMPERATURE: 128 DEG F

LABEL POINT INFORMATION
****

#	TIME OF DAY HH:MM:SS	DATE DD-MMM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	5:44:44	10-FEB	HYDROSTATIC MUD	-2.27	2892.1
2	5:47:00	10-FEB	START FLOW	0.00	88.0
3	6:02:04	10-FEB	END FLOW & START SHUT-IN	15.06	133.1
4	6:33:40	10-FEB	END SHUT-IN	46.66	1984.9
5	6:34:29	10-FEB	START FLOW	47.48	156.8
6	7:34:19	10-FEB	END FLOW & START SHUT-IN	107.31	324.5
7	10:34:01	10-FEB	END SHUT-IN	287.01	2105.3
8	10:37:59	10-FEB	HYDROSTATIC MUD	290.99	2895.0

SUMMARY OF FLOW PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	INITIAL PRESSURE PSIA
1	0.00	15.06	15.06	88.0	133.1	88.0
2	47.48	107.31	59.83	156.8	324.5	156.8

SUMMARY OF SHUTIN PERIODS
****

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	15.06	46.66	31.60	133.1	1984.9	133.1	15.06
2	107.31	287.01	179.70	324.5	2105.3	324.5	74.89

TEST PHASE: FLOW PERIOD # 1

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
5:47:00	10-FEB	0.00	0.00	88.0
5:50:34	10-FEB	3.56	3.56	88.0
5:52:02	10-FEB	5.03	5.03	88.0
5:53:12	10-FEB	6.20	6.20	92.1
5:55:07	10-FEB	8.11	8.11	100.3
5:57:05	10-FEB	10.08	10.08	110.1
5:58:24	10-FEB	11.40	11.40	117.0
6:00:13	10-FEB	13.22	13.22	125.2
6:01:58	10-FEB	14.96	14.96	131.6
6:02:04	10-FEB	15.06	15.06	133.1

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 133.1 PSIA
PRODUCING TIME = 15.06 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
6:02:04	10-FEB	15.06	0.00	133.1	0.0	
6:02:17	10-FEB	15.28	0.22	147.3	14.2	1.8417
6:02:45	10-FEB	15.75	0.69	201.8	68.7	1.3584
6:03:05	10-FEB	16.09	1.03	253.5	120.4	1.1937
6:03:25	10-FEB	16.41	1.35	314.7	181.6	1.0848
6:03:43	10-FEB	16.71	1.65	377.7	244.6	1.0055
6:04:10	10-FEB	17.16	2.10	493.4	360.3	0.9123
6:04:32	10-FEB	17.53	2.47	600.3	467.2	0.8511
6:04:48	10-FEB	17.80	2.74	674.4	541.3	0.8127
6:05:04	10-FEB	18.07	3.01	756.4	623.2	0.7784
6:05:24	10-FEB	18.40	3.34	844.9	711.8	0.7411
6:05:55	10-FEB	18.91	3.85	968.5	835.4	0.6912
6:06:26	10-FEB	19.43	4.37	1077.6	944.5	0.6480
6:06:59	10-FEB	19.98	4.92	1171.5	1038.4	0.6086
6:07:37	10-FEB	20.62	5.56	1252.6	1119.4	0.5692
6:08:01	10-FEB	21.02	5.96	1307.1	1174.0	0.5474
6:08:35	10-FEB	21.59	6.53	1360.4	1227.2	0.5193
6:09:04	10-FEB	22.06	7.00	1405.1	1272.0	0.4985
6:09:39	10-FEB	22.65	7.59	1451.2	1318.0	0.4748
6:10:18	10-FEB	23.30	8.24	1496.9	1363.7	0.4514
6:11:05	10-FEB	24.09	9.03	1551.1	1418.0	0.4261
6:11:41	10-FEB	24.68	9.62	1584.8	1451.7	0.4092
6:12:36	10-FEB	25.60	10.54	1627.1	1493.9	0.3854
6:13:20	10-FEB	26.34	11.28	1659.5	1526.4	0.3683
6:13:58	10-FEB	26.96	11.90	1685.1	1551.9	0.3552
6:14:53	10-FEB	27.88	12.82	1713.7	1580.6	0.3374
6:15:52	10-FEB	28.86	13.80	1740.6	1607.4	0.3204
6:16:43	10-FEB	29.71	14.65	1764.2	1631.1	0.3071
6:17:31	10-FEB	30.52	15.46	1784.7	1651.6	0.2954
6:18:24	10-FEB	31.40	16.34	1803.9	1670.8	0.2837
6:19:11	10-FEB	32.18	17.12	1822.2	1689.1	0.2741
6:20:11	10-FEB	33.19	18.13	1839.5	1706.4	0.2626
6:21:16	10-FEB	34.26	19.20	1857.2	1724.1	0.2515

TEST PHASE: SHUTIN PERIOD # 1 FINAL FLOW PRESSURE = 133.1 PSIA
PRODUCING TIME = 15.06 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
6:22:03	10-FEB	35.05	19.99	1869.5	1736.4	0.2439
6:23:11	10-FEB	36.19	21.13	1884.3	1751.2	0.2337
6:23:34	10-FEB	36.56	21.50	1888.7	1755.6	0.2306
6:23:52	10-FEB	36.87	21.81	1895.0	1761.9	0.2280
6:24:44	10-FEB	37.74	22.68	1906.1	1772.9	0.2212
6:26:04	10-FEB	39.06	24.00	1921.8	1788.7	0.2115
6:27:04	10-FEB	40.07	25.01	1933.2	1800.0	0.2047
6:28:04	10-FEB	41.07	26.01	1944.2	1811.1	0.1984
6:29:37	10-FEB	42.62	27.56	1958.1	1824.9	0.1893
6:30:59	10-FEB	43.98	28.92	1968.8	1835.7	0.1821
6:32:34	10-FEB	45.57	30.51	1978.9	1845.7	0.1742
6:33:40	10-FEB	46.66	31.60	1984.9	1851.7	0.1693

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
6:34:29	10-FEB	47.48	0.00	156.8
6:36:14	10-FEB	49.23	1.75	158.0
6:37:31	10-FEB	50.52	3.04	165.0
6:38:55	10-FEB	51.92	4.44	173.5
6:40:14	10-FEB	53.24	5.76	180.1
6:41:30	10-FEB	54.50	7.02	184.8
6:43:11	10-FEB	56.19	8.71	191.1
6:44:47	10-FEB	57.79	10.31	197.7
6:46:37	10-FEB	59.62	12.14	205.3
6:48:56	10-FEB	61.93	14.45	212.6
6:51:28	10-FEB	64.47	16.99	220.8
6:53:31	10-FEB	66.52	19.04	227.4
6:55:49	10-FEB	68.81	21.33	235.3
6:58:23	10-FEB	71.39	23.91	243.1
7:00:40	10-FEB	73.67	26.19	252.3
7:03:06	10-FEB	76.10	28.62	260.5
7:04:52	10-FEB	77.87	30.39	264.6
7:07:01	10-FEB	80.01	32.53	271.8
7:08:57	10-FEB	81.95	34.47	277.2
7:11:08	10-FEB	84.13	36.65	284.1
7:13:25	10-FEB	86.41	38.93	289.8
7:15:31	10-FEB	88.51	41.03	296.7
7:16:17	10-FEB	89.29	41.81	298.9
7:17:32	10-FEB	90.53	43.05	302.4
7:18:39	10-FEB	91.65	44.17	304.6
7:20:02	10-FEB	93.04	45.56	306.5
7:21:55	10-FEB	94.92	47.44	309.3
7:23:49	10-FEB	96.82	49.34	311.9
7:25:55	10-FEB	98.92	51.44	313.8
7:27:50	10-FEB	100.84	53.36	316.0
7:29:59	10-FEB	102.98	55.50	318.5

TEST PHASE: FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
7:31:45	10-FEB	104.75	57.27	321.0
7:33:48	10-FEB	106.80	59.32	324.5
7:34:19	10-FEB	107.31	59.83	324.5

TEST PHASE: SHUTIN PERIOD # 2

FINAL FLOW PRESSURE = 324.5 PSIA
PRODUCING TIME = 74.89 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
7:34:19	10-FEB	107.31	0.00	324.5	0.0	
7:34:44	10-FEB	107.73	0.42	374.6	50.1	2.2536
7:35:13	10-FEB	108.21	0.90	469.8	145.3	1.9254
7:35:29	10-FEB	108.48	1.17	512.7	188.2	1.8130
7:36:02	10-FEB	109.04	1.73	610.7	286.2	1.6463
7:36:28	10-FEB	109.47	2.16	690.8	366.3	1.5523
7:36:49	10-FEB	109.81	2.50	761.4	436.9	1.4907
7:37:02	10-FEB	110.03	2.72	809.0	484.5	1.4553
7:37:17	10-FEB	110.28	2.97	856.0	531.5	1.4186
7:37:34	10-FEB	110.57	3.26	908.3	583.8	1.3797
7:37:46	10-FEB	110.77	3.46	942.3	617.9	1.3550
7:38:00	10-FEB	111.00	3.69	978.6	654.1	1.3283
7:38:19	10-FEB	111.31	4.00	1025.3	700.8	1.2950
7:38:37	10-FEB	111.61	4.30	1071.0	746.5	1.2652
7:38:53	10-FEB	111.88	4.57	1106.3	781.8	1.2402
7:39:13	10-FEB	112.21	4.90	1144.1	819.6	1.2118
7:39:35	10-FEB	112.58	5.27	1185.7	861.2	1.1821
7:39:52	10-FEB	112.86	5.55	1216.9	892.5	1.1612
7:40:14	10-FEB	113.23	5.92	1249.1	924.6	1.1351
7:40:41	10-FEB	113.68	6.37	1288.8	964.3	1.1057
7:41:08	10-FEB	114.13	6.82	1324.4	1000.0	1.0785
7:41:32	10-FEB	114.53	7.22	1349.6	1025.2	1.0559
7:41:52	10-FEB	114.86	7.55	1369.8	1045.3	1.0382
7:42:16	10-FEB	115.26	7.95	1392.5	1068.1	1.0179
7:42:41	10-FEB	115.68	8.37	1415.8	1091.4	0.9977
7:43:06	10-FEB	116.10	8.79	1437.6	1113.1	0.9786
7:43:30	10-FEB	116.50	9.19	1455.9	1131.4	0.9614
7:43:52	10-FEB	116.87	9.56	1473.2	1148.7	0.9461
7:44:19	10-FEB	117.32	10.01	1491.5	1167.0	0.9285
7:44:49	10-FEB	117.82	10.51	1508.5	1184.1	0.9099
7:45:14	10-FEB	118.23	10.92	1524.6	1200.1	0.8953
7:45:49	10-FEB	118.82	11.51	1544.5	1220.0	0.8754
7:46:28	10-FEB	119.46	12.15	1565.3	1240.8	0.8551
7:47:10	10-FEB	120.16	12.85	1583.6	1259.1	0.8343
7:47:44	10-FEB	120.74	13.43	1599.0	1274.5	0.8180
7:48:11	10-FEB	121.19	13.88	1611.3	1286.8	0.8059
7:49:03	10-FEB	122.05	14.74	1631.2	1306.7	0.7840
7:50:08	10-FEB	123.13	15.82	1653.8	1329.4	0.7584
7:51:03	10-FEB	124.05	16.74	1673.4	1348.9	0.7383
7:51:51	10-FEB	124.85	17.54	1689.5	1365.0	0.7218

TEST PHASE: SHUTIN PERIOD # 2 FINAL FLOW PRESSURE = 324.5 PSIA
PRODUCING TIME = 74.89 MIN

TIME OF DAY HH:MM:SS	DATE DD-MMM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
7:52:40	10-FEB	125.67	18.36	1703.3	1378.9	0.7058
7:53:28	10-FEB	126.46	19.15	1715.0	1390.5	0.6911
7:54:26	10-FEB	127.43	20.12	1728.9	1404.4	0.6741
7:55:20	10-FEB	128.34	21.03	1741.5	1417.0	0.6591
7:56:17	10-FEB	129.29	21.98	1754.4	1430.0	0.6442
7:57:17	10-FEB	130.29	22.98	1768.6	1444.1	0.6293
7:58:22	10-FEB	131.36	24.05	1780.6	1456.1	0.6143
7:59:25	10-FEB	132.42	25.11	1793.5	1469.0	0.6002
8:00:31	10-FEB	133.51	26.20	1805.8	1481.3	0.5864
8:01:40	10-FEB	134.66	27.35	1817.2	1492.7	0.5727
8:02:38	10-FEB	135.63	28.32	1826.3	1501.8	0.5616
8:03:52	10-FEB	136.87	29.56	1836.7	1512.2	0.5482
8:05:18	10-FEB	138.30	30.99	1847.7	1523.3	0.5336
8:06:35	10-FEB	139.58	32.27	1857.8	1533.3	0.5212
8:07:34	10-FEB	140.56	33.25	1865.1	1540.6	0.5122
8:09:07	10-FEB	142.11	34.80	1876.1	1551.6	0.4986
8:10:33	10-FEB	143.55	36.24	1885.2	1560.8	0.4866
8:11:55	10-FEB	144.91	37.60	1894.1	1569.6	0.4759
8:13:43	10-FEB	146.72	39.41	1904.2	1579.7	0.4624
8:15:11	10-FEB	148.19	40.88	1913.0	1588.5	0.4521
8:16:44	10-FEB	149.74	42.43	1920.9	1596.4	0.4417
8:18:25	10-FEB	151.42	44.11	1929.7	1605.2	0.4310
8:20:00	10-FEB	153.00	45.69	1937.6	1613.1	0.4215
8:21:52	10-FEB	154.86	47.55	1945.1	1620.7	0.4108
8:23:33	10-FEB	156.55	49.24	1952.4	1627.9	0.4016
8:26:30	10-FEB	159.50	52.19	1963.7	1639.3	0.3865
8:30:36	10-FEB	163.60	56.29	1976.3	1651.9	0.3674
8:34:47	10-FEB	167.78	60.47	1988.6	1664.2	0.3500
8:39:21	10-FEB	172.35	65.04	2000.3	1675.8	0.3327
8:44:38	10-FEB	177.63	70.32	2011.3	1686.9	0.3149
8:49:29	10-FEB	182.48	75.17	2020.8	1696.3	0.3002
8:54:23	10-FEB	187.39	80.08	2030.2	1705.8	0.2867
8:59:15	10-FEB	192.25	84.94	2038.1	1713.7	0.2745
9:04:48	10-FEB	197.80	90.49	2046.0	1721.6	0.2619
9:10:38	10-FEB	203.63	96.32	2052.6	1728.2	0.2498
9:16:07	10-FEB	209.11	101.80	2059.9	1735.4	0.2395
9:21:12	10-FEB	214.20	106.89	2064.9	1740.5	0.2306
9:27:18	10-FEB	220.30	112.99	2070.9	1746.4	0.2208
9:31:27	10-FEB	224.45	117.14	2073.8	1749.3	0.2147
9:36:46	10-FEB	229.77	122.46	2078.8	1754.3	0.2072
9:42:26	10-FEB	235.44	128.13	2082.3	1757.8	0.1999
9:49:59	10-FEB	242.99	135.68	2085.4	1760.9	0.1909
9:56:54	10-FEB	249.90	142.59	2090.5	1766.0	0.1833
10:04:38	10-FEB	257.64	150.33	2093.9	1769.5	0.1756
10:14:01	10-FEB	267.02	159.71	2099.3	1774.8	0.1670
10:21:50	10-FEB	274.84	167.53	2101.2	1776.7	0.1605
10:30:01	10-FEB	283.01	175.70	2104.0	1779.6	0.1542
10:34:01	10-FEB	287.01	179.70	2105.3	1780.8	0.1513

Form 3160-4
(November 1983)
(formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: U - 46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

7. UNIT AGREEMENT NAME: N/A

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

8. FARM OR LEASE NAME: MANTEL FEDERAL

2. NAME OF OPERATOR: CELSIUS ENERGY COMPANY

9. WELL NO.: 23-1

3. ADDRESS OF OPERATOR: 1125 17th Street, Suite 2240, Denver, Colorado 80202

10. FIELD AND POOL, OR WILDCAT: MANTEL

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 2488' FNL & 2098' FWL (SE/4 NW/4)
At top prod. interval reported below
At total depth: 2390' FNL - 2410' FWL (SE/4 NW/4)

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 23 T37S-R23E SLBM

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
43-037-31564	11/15/90	SAN JUAN	UTAH

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
1/18/91	2/12/91	3/7/91	5777', 5790' KBM	5779'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
6422'MD 6389.46 TVD	6368.26MD	1	→	Yes	No

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
ISMAY 6078' - 6094' KBM MD
6048' - 6064' TVD

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: TVD, Sonic, DIL, CNL-FDC, CBL-VDL-CCL-GR COMPENSATED ACOUSTIC VELOSITY 2-19-91 DUAL SPACED NEUTRON

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	24# K-55	2216.50'MD	12-1/4"	830 Sx 65/35 Poz, 350 Sx "G"	None
4-1/2"	11.6 K-55	6415.81'MD	7-7/8"	730 Sx Class "G"	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	6033.24	NA

31. PERFORATION RECORD (Interval, size and number)
6078'-6094'MD 3-3/8", 18 Gram, 2spf
32 Holes, .68" Dia Holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6078'-6094'	750 Gals of 28% HCl Acid

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
AWAITING PIPELINE	FLOWING	SHUT-IN

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3/5-7/1991	25	20/64		14.24	1518	3.91	106,601

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
1100	1125		13.7	1457	3.8	64.8

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): FLARED FOR THE TEST - WILL BE SOLD

TEST WITNESSED BY: Jim McCrea

35. LIST OF ATTACHMENTS: TOPS, TVD LOG

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE MANAGER - OPERATIONS DATE 3/8/91

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

1c

MANTEL FEDERAL NO. 23-1 (KB 5790 DTD 6422 LTD 6424)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
DAKOTA	SURFACE	SURFACE
MORRISON	110	110
SUMMERVILLE	995	995
ENTRADA	1020	1020
CARMEL	1160	1160
NAVAJO	1232	1232
KAYENTA	1720	1720
WINGATE	1878	1878
CHINLE	2150	2150
SHINARUMP	2840	2840
CUTLER	2972	2972
HONAKER TRAIL	4614	4614
PARADOX	5422	5406
ISMAY	6041	6011
HOVENWEEP	6167	6136
LOWER ISMAY	6208	6176
GOTHIC	6258	6227
DESERT CREEK	6291	6260
LOWER DESERT CREEK	6339	6307
DESERT CREEK POROSITY	6347	6315
CHIMNEY ROCK	6361	6329
AKAH	6386	6354
SALT	6422	6390
TOTAL DEPTH	6424	6392

DATADRIL

CELSIUS ENERGY COMPANY
MANTEL FEDERAL NO. 23-1
SAN JUAN COUNTY, UTAH
SECTION 23, T-37S, R-23E
JANUARY 28, 1991
API # 43-037-315164

MAGNETIC SINGLE SHOT SURVEY
12 DEGREES EAST DECLINATION
PROPOSED DIRECTION: N77.04E
KELLY BUSHING: 13 FEET
DIRECTIONAL SUP: TOM CARLTON

RECEIVED
MAR 2 5 1991
DIVISION OF
OIL GAS & MINING

File Name: CEC23-1S

*** RECORD OF SURVEY ***

Calculated by DATADRIL's CADDS System

Radius of Curvature Method
All Angles are Decimal
Vertical Section Plane: N 77.04 E

TYPE OF SURVEY	MEASURED DEPTH (FT)	INCL ANGLE (DEG)	D R I F T DIRECTION (DEG)	COURSE LENGTH (FT)	TOTAL VERTICAL DEPTH	T O T A L RECTANGULAR COORDINATES (FT)		VERTICAL SECTION (FT)	DOGLEG SEVERITY (DEG/100')
MSS	4814.00	5.75	N 69.00 E	31.00	4813.55	9.29 N	20.43 E	22.00	3.63
MSS	4845.00	6.75	N 74.00 E	31.00	4844.36	10.36 N	23.63 E	25.35	3.67
MSS	4875.00	7.75	N 75.00 E	30.00	4874.12	11.37 N	27.28 E	29.14	3.36
MSS	4905.00	9.75	N 73.00 E	30.00	4903.81	12.56 N	31.42 E	33.43	3.47
MSS	4936.00	10.00	N 72.00 E	31.00	4934.40	14.08 N	36.23 E	38.47	4.07
MSS	4967.00	10.75	N 72.00 E	31.00	4964.89	15.80 N	41.54 E	44.03	2.42
MSS	4998.00	11.50	N 73.00 E	31.00	4995.31	17.60 N	47.25 E	49.99	2.50
MSS	5106.00	13.75	N 71.00 E	108.00	5100.69	24.90 N	69.70 E	73.50	2.12
MSS	5233.00	16.00	N 70.00 E	127.00	5223.43	35.78 N	100.42 E	105.89	1.78
MSS	5304.00	16.00	N 72.00 E	71.00	5291.68	42.15 N	118.93 E	125.35	.78
MSS	5431.00	14.75	N 72.00 E	127.00	5414.13	52.56 N	150.95 E	158.89	.98
MSS	5553.00	14.00	N 73.00 E	122.00	5532.31	61.66 N	179.84 E	188.09	.65
MSS	5644.00	13.50	N 72.00 E	91.00	5620.70	68.17 N	200.47 E	210.65	.61
MSS	5737.00	12.25	N 75.00 E	93.00	5711.36	74.05 N	220.33 E	231.33	1.52
MSS	5828.00	10.00	N 74.00 E	91.00	5800.64	78.74 N	237.25 E	248.87	2.48
MSS	5921.00	8.50	N 75.00 E	93.00	5892.43	82.74 N	251.66 E	263.90	1.62
MSS	6040.00	7.50	N 76.00 E	119.00	6010.27	86.89 N	267.69 E	280.36	.85
PROJ	6094.00	7.00	N 76.50 E	54.00	6063.84	88.50 N	274.31 E	287.17	.93

BOTTOM HOLE CLOSURE: 288.23 Feet at N 72.12 Degrees E

MSS 6377 6½° N77E 6344.76 94.91 N 307.49 E 321.39

Proj. 6422 6½° N77E 6383.47 98.06 N 312.45 E 324.48

DATADRIL

CELSIUS ENERGY COMPANY
MANTEL FEDERAL NO. 23-1
SAN JUAN COUNTY, UTAH
SECTION 23, T-37S, R-23E
JANUARY 28, 1991

MAGNETIC SINGLE SHOT SURVEY
12 DEGREES EAST DECLINATION
PROPOSED DIRECTION: N77.04E
KELLY BUSHING: 13 FEET
DIRECTIONAL SUP: TOM CARLTON

File Name: CEC23-1S

*** RECORD OF SURVEY ***

Calculated by DATADRIL's CADDS System

Radius of Curvature Method
All Angles are Decimal
Vertical Section Plane: N 77.04 E

TYPE OF SURVEY	MEASURED DEPTH (FT)	INCL ANGLE (DEG)	D R I F T DIRECTION (DEG)	COURSE LENGTH (FT)	TOTAL VERTICAL DEPTH	T O T A L RECTANGULAR COORDINATES (FT)		VERTICAL SECTION (FT)	DOGLEG SEVERITY (DEG/100')
MSS	2212.00	0.00	N 0.00 E	0.00	2212.00	0.00 N	0.00 E	0.00	0.00
Casing: 8 5/8" set @ 2212 feet									
MSS	2316.00	.75	N 48.00 W	104.00	2316.00	.46 N	.51 W	-.39	.72
MSS	2809.00	.25	N 27.00 E	493.00	2808.98	4.39 N	1.24 W	-.22	.15
MSS	3448.00	.50	N 87.00 E	639.00	3447.96	6.57 N	2.11 E	3.53	.07
MSS	3933.00	.25	N 77.00 E	485.00	3932.95	7.01 N	5.25 E	6.69	.05
MSS	4427.00	.25	S 52.00 E	494.00	4426.95	6.56 N	7.29 E	8.57	.04
KOP: 4654 FEET MD BHA: DYNA-DRILL W/ 1 DEGREE SUB									
MSS	4690.00	2.00	N 57.00 E	263.00	4689.89	8.34 N	12.12 E	13.24	.74
MSS	4721.00	3.25	N 66.00 E	31.00	4720.85	7.02 N	13.37 E	14.60	4.23
MSS	4752.00	4.25	N 70.00 E	31.00	4751.79	7.78 N	15.25 E	16.61	3.33
MSS	4783.00	5.00	N 78.00 E	31.00	4782.69	8.47 N	17.65 E	19.10	3.19
MSS	4814.00	5.75	N 69.00 E	31.00	4813.55	9.29 N	20.43 E	22.00	3.63
MSS	4845.00	6.75	N 74.00 E	31.00	4844.36	10.36 N	23.63 E	25.35	3.67
MSS	4875.00	7.75	N 75.00 E	30.00	4874.12	11.37 N	27.28 E	29.14	3.36
MSS	4905.00	8.75	N 73.00 E	30.00	4903.81	12.56 N	31.42 E	33.43	3.47
MSS	4936.00	10.00	N 72.00 E	31.00	4934.40	14.08 N	36.23 E	38.47	4.07
MSS	4967.00	10.75	N 72.00 E	31.00	4964.89	15.80 N	41.54 E	44.03	2.42
MSS	4998.00	11.50	N 73.00 E	31.00	4995.31	17.60 N	47.25 E	49.99	2.50

DATADRIL

CELSIUS ENERGY COMPANY
MANTEL FEDERAL NO. 23-1

SAN JUAN COUNTY, UTAH
SECTION 23, T-37S, R-23E

TYPE OF SURVEY	MEASURED DEPTH (FT)	INCL ANGLE (DEG)	D R I F T DIRECTION (DEG)	COURSE LENGTH (FT)	TOTAL VERTICAL DEPTH	T O T A L RECTANGULAR COORDINATES (FT)		VERTICAL SECTION (FT)	DOGLEG SEVERITY (DEG/100')
MSS	5100.00	13.75	N 71.00 E	100.00	5100.69	24.90 N	69.70 E	73.50	2.12
MSS	5223.00	15.00	N 70.00 E	127.00	5223.43	35.78 N	100.42 E	105.89	1.78
MSS	5304.00	16.00	N 72.00 E	71.00	5291.68	42.15 N	118.93 E	125.35	.78
MSS	5431.00	14.75	N 72.00 E	127.00	5414.13	52.56 N	150.95 E	158.99	.98
MSS	5553.00	14.00	N 73.00 E	122.00	5532.31	61.66 N	179.84 E	189.09	.65
MSS	5644.00	13.50	N 72.00 E	91.00	5620.70	68.17 N	200.47 E	210.65	.61
MSS	5737.00	12.25	N 75.00 E	93.00	5711.36	74.05 N	220.33 E	231.33	1.52
MSS	5828.00	10.00	N 74.00 E	91.00	5800.64	78.74 N	237.25 E	248.87	2.48
MSS	5921.00	8.50	N 75.00 E	93.00	5892.43	82.74 N	251.66 E	263.80	1.62
MSS	6040.00	7.50	N 76.00 E	119.00	6010.27	86.89 N	267.69 E	280.36	.85
PROJ	6380.00	6.00	N 76.00 E	340.00	6347.91	96.55 N	306.46 E	320.31	.44

BOTTOM HOLE CLOSURE: 321.31 Feet at N 72.51 Degrees E

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE* (other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: CELSIUS ENERGY COMPANY

3. ADDRESS OF OPERATOR: 1125-17th Street, Suite 2240, Denver, Colorado 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2488' FNL; 2098' FWL SE/4 NW/4
Township 37 South, Range 23 East

5. LEASE DESIGNATION AND SERIAL NO.: U-46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

7. UNIT AGREEMENT NAME: NA

8. FARM OR LEASE NAME: Mantel Federal #23-1

9. WELL NO.: #23-1

10. FIELD AND POOL, OR WILDCAT:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 23, T37S-R23E

14. PERMIT NO.: 43-037-31564

15. ELEVATIONS (Show whether DF, RT, GR, etc.):

12. COUNTY OR PARISH: San Juan

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other) Back-Fill Reserve Pit			☒	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Celsius Energy Company requests permission to back-fill the reserve pit which is located on the above referenced well location before October 15, 1991. Reclamation will be done in accordance to the stipulations of the APD.

Accepted by the State of Utah Division of Oil, Gas and Mining
Date: 9-30-91
By:

RECEIVED
SEP 25 1991
DIVISION OF OIL GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE District Manager DATE 9/19/91

(This space for Federal or State office use)

APPROVED BY Federal Approval of this Action is Necessary TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

(November 1983)
(Formerly 9–331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004–0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☑ OTHER

2. NAME OF OPERATOR
Celsius Energy Company

3. ADDRESS OF OPERATOR
1125 17th St. Suite 2240, Denver, Co. 80202 (303) 296-8945

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
Surface: 2488 FN & 2098 FW Bottom: 2430 FN & 2350 FW

5. LEASE DESIGNATION AND SERIAL NO.
U-46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME
Mantel Federal

9. WELL NO.
23-1

10. FIELD AND POOL, OR WILDCAT
Deadman Canyon

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
23-37s-23e SLBM

12. COUNTY OR PARISH
San Juan

13. STATE
Ut.

14. PERMIT NO.
43-037-31564

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5,777' graded ground

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other) Install tanks & heater/dehy.		☑		(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS: (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Will install tan ≈400 bbl condensate tank, ≈400 bbl water tank, fenced 12' x 12' x 6' flare pit, and ≈500,000 btu heater and ≈4MMcfd dehydrator on location.

Application will be made on SF-299 for pipeline right-of-way.

RECEIVED
SEP 27 1991
DIVISION OF OIL GAS & MINING

ACCEPTED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 9/30/91
BY: J.M. Matthews

18. I hereby certify that the foregoing is true and correct
SIGNED [signature] TITLE District Manager DATE 9/24/91

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

cc: MDO(3), SJRA(1), UDOGM(2), Wood(1)

*See Instructions on Reverse Side

Form 3160-5
(December 1989)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
OCT 15 1991
DIVISION OF
OIL, GAS & MINING

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: U -46825
6. If Indian, Allottee or Tribe Name: NA
7. If Unit or CA, Agreement Designation: NA
8. Well Name and No.: MANTEL FEDERAL #23-1
9. API Well No.: 43-037-31564
10. Field and Pool, or Exploratory Area: DEADMAN CANYON
11. County or Parish, State: SAN JUAN, UTAH

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: CELSIUS ENERGY COMPANY
3. Address and Telephone No.: 1125 17th Street, Suite2240, Denver, Colorado 80202
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2488' FNL; 2098' FWL SE/4 NW/4 Section 23, T. 37 S., R. 23 E.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other OFF LEASE MEASUREMENT	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

AS INDICATED ON PREVIOUS SUNDRY NOTICES, CELSIUS ENERGY COMPANY INTENDS TO INSTALL PRODUCTION EQUIPMENT ON THE WOODS-COX NO. 33-23 AND THE MANTEL FEDERAL NO. 23-1. A GAS LATERAL WILL BE BUILT FROM THE WOODS-COX NO. 33-23 TRENDING NORTH/WESTERLY TO THE MANTEL FEDERAL NO. 23-1 ENDING UP AT WESTERN GAS PROCESSORS LINE AT NW/4, SE/4 SECTION 14, T. 37 S., R. 23 E., SAN JUAN COUNTY, UTAH. CELSIUS INTENDS TO INSTALL INDIVIDUAL GAS METERS AT EACH LOCATION WITH THE MASTER METER (FOR SALES) BEING LOCATED AT THE TERMINOUS OF THE CELSIUS LATERAL ADJACENT TO WESTERN GAS LINE. CELSIUS WILL ALLOCATE GAS PRODUCTION (FROM THE SALES METER) BASED ON THE INDIVIDUAL WELL METERS. ROYALTIES WILL BE PAID BASED ON THE TOTAL GAS METERED AT THE SALES METER AND ALLOCATED BACK TO EACH WELL BASED ON THE INDIVIDUAL WELL METERS. OIL PRODUCTION WILL BE MEASURED AT EACH LOCATION AND PAID ACCORDINGLY.

IF YOU HAVE ANY QUESTIONS, PLEASE ADVISE.

ACCEPTED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 10-18-91
BY: JR Matthews

14. I hereby certify that the foregoing is true and correct
Signed _____ Title DISTRICT MANAGER Date OCTOBER 8, 1991

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statement or representations as to any matter within its jurisdiction.

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR
CELSIUS ENERGY COMPANY

3. ADDRESS OF OPERATOR
1125-17TH STREET, SUITE 2240, DENVER, COLORADO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface

SURFACE: 2488' FNL & 2098' FWL
BOTTOM: 2450' FNL & 2350' FWL

5. LEASE DESIGNATION AND SERIAL NO.
U - 46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME
MANTEL FEDERAL

9. WELL NO.
23-1

10. FIELD AND POOL, OR WILDCAT
DEADMAN CANYON

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SECTION 23
T37S-R23E, 6TH PM

14. PERMIT NO.
43-037-31564

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5777' GRADED GROUND

12. COUNTY OR PARISH
SAN JUAN

13. STATE
UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) INITIAL PRODUCTION REPORT			
(Other) SUBSEQUENT REPORT			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

DATE OF INITIAL PRODUCTION: 6/1/92

TEST RATE: 14 BARRELS CONDENSATE, 9 BARRELS WATER, 901 MCF WITH 1475 FTP AND 1510 CP; 22 HOUR TEST

RECEIVED
JUN 25 1992
DIVISION OF OIL GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE DISTRICT MANAGER DATE 6/22/92

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:
UT-922

August 1, 1995

D.J. Simmons Company LP
P.O. Box 1469
Farmington, New Mexico 87499

Re: Successor of Operator
Communitization Agreement (CA)
MO49P-84690C
San Juan County, Utah
Sec. 23 37S. 23E. 1640'

Gentlemen:

On July 28, 1995, we received an indenture dated April 1, 1995, whereby Celsius Energy Company resigned as Operator and D. J. Simmons Company Limited Partnership was designated as Operator for CA MO49P-84690C, San Juan County, Utah.

This indenture was executed by all required parties. The instrument is hereby approved effective August 1, 1995.

Your statewide (Utah) oil and gas bond No. 1002 will be used to cover CA operations.

Please advise all interested parties of the change in operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ R.A. McKee

for Robert A. Henricks
Chief, Branch of Fluid Minerals

Enclosure

bcc: District Manager - Moab (w/enclosure)
Division Oil, Gas, & Mining
File - MO49P-84690C (w/enclosure)
MMS - Data Management Division
Agr. Sec. Chron
Fluid Chron
U-922:TAThompson:tt:08-01-95

DOLAR OIL PROPERTIES

Spectrum Mineral Services

The Dolar LLC

Utah Units and Permits

The Cherokee LLC

935 East South Union Avenue, Suite D-202
Salt Lake City, Utah 84047
Phone (801) 561 3121 • Fax (801) 561-3133

FACSIMILE TRANSMITTAL COVER SHEET

TO: Lisha / State of Utah, Div of OGL

FACSIMILE NUMBER: 355-0922

FROM: Mark S. Dolar

DATE: 8/17, 1995 TIME SENT: 3:30

NUMBER OF PAGES: 3 (Including cover sheet)

MESSAGE: Per your request

If documents described above are not properly received, please call (801) 561-3121. Our fax number is (801) 561-3133

DESIGNATION OF SUCCESSOR OPERATOR

Communitization Agreement Number MO49P-84690C

Designation of Successor Operator for communitized area, County of San Juan, State of Utah, being:

Section 23, Township 37 South, Range 23 East
Containing 640 acres, more or less.

THIS INDENTURE, dated as of the 1st day of April, 1995, by and between D. J. SIMMONS COMPANY LIMITED PARTNERSHIP, hereinafter designated as "First Party", and the owners of communitized working interests, hereinafter designated as "Second Parties",

WHEREAS, under the provisions of the Act of February 25, 1920, 41 Stat. 437, 30 U.S.C. Secs. 181, et seq., as amended by the Act of August 8, 1946, 60 Stat. 950, a Communitization Agreement for the above Communitized Area, effective December 21, 1983, wherein CELSIUS ENERGY COMPANY is currently designated as Operator of the communitized area; and

WHEREAS the Designation of a Successor Operator is now desired pursuant to Section No. 3 of the communitized area; and

WHEREAS, the First Party has been and hereby is designated by Second Parties as Operator of the communitized area, and said First Party desires to assume all the rights, duties and obligations of Operator under the said Communitization Agreement.

NOW, THEREFORE, in consideration of the premises hereinbefore set forth and the promises hereinafter stated, the First Party hereby covenants and agrees to fulfill the duties and assume the obligations of Operator of the communitized area under and pursuant to all the terms of said Communitization Agreement, and the Second Parties covenant and agree that, effective upon approval of this indenture by the Chief, Branch of Fluid Minerals, Bureau of Land Management, First Party shall be granted and exclusive right and privilege of exercising any and all rights and privileges as Operator, pursuant to the terms and conditions of said Communitization Agreement; said Agreement being hereby incorporated herein by reference and made a part hereof as fully and effectively as though said Agreement were expressly set forth in this instrument.

IN WITNESS WHEREOF, the parties hereto have executed this instrument as of the date hereinabove set forth.

FIRST PARTY

ATTEST

By: _____
John A. Byrom
Production Engineer

D. J. SIMMONS COMPANY
LIMITED PARTNERSHIP
By: D.J. Simmons, Inc., Its General Partner
By: _____
William Manchester, Vice President

SECOND PARTY

ATTEST

By: _____
J. L. Healey
Assistant Secretary

CELSIUS ENERGY COMPANY

By: _____
G. L. Nordloh
President

JACK L. GRYNBERG

CELESTE C. GRYNBERG

CORPORATION ACKNOWLEDGEMENT

STATE OF NEW MEXICO)
) ss
COUNTY OF SAN JUAN)

On this 23RD day of MAY, 1995, before me, the undersigned, a Notary Public, in and for the County and State aforesaid, personally appeared WILLIAM MANCHESTER, VICE PRESIDENT OF D.J.SIMMONS,INC., G.P. of D. J. Simmons Company Limited Partnership, to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument and acknowledge to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

In witness whereof, I have hereunto set my official signature and affixed my notary seal, the day and year first above written.

My Commission Expires:
AUG. 12,1997

Notary Public

STATE OF UTAH)
) ss
COUNTY OF SALT LAKE)

On this 16th day of July, 1995, before me, the undersigned, a Notary Public, in and for the County and State aforesaid, personally appeared G. L. Nordloh, President of Celsius Energy Company, a Nevada corporation to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument and acknowledge to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

In witness whereof, I have hereunto set my official signature and affixed my notary seal, the day and year first above written.

My Commission Expires:
June 1, 1996

Notary Public

NOTARY PUBLIC
Evelyn J. McConkie
10 East South Temple
Salt Lake City, Utah 84133
My Commission Expires
June 1, 1996
STATE OF UTAH

INDIVIDUAL ACKNOWLEDGEMENT

STATE OF Colorado)
) ss
COUNTY OF Arapahoe)

Before me, the undersigned a Notary Public in and for said County and State, on this 23rd day of June, 1995, personally appeared Jack L. Grynberg and Celeste C. Grynberg personally known to me to be the identical person(s) who executed the same as their free and voluntary act and deed, for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my official seal the day and year first above written.

NOTARY PUBLIC
LINDA L. MAGNUSON
STATE OF COLORADO

My Commission Expires

Notary Public

My Commission Expires March 18, 1998

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:
1-LEC 7-PL ✓
2-LWP 8-SJ ✓
3-DTS 9-FILE
4-VLD ✓
5-RJF ✓
6-LWP ✓

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XXX Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator ☐ Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 4-1-95)

TO (new operator) D J SIMMONS COMPANY LTD
(address) 9035 S 700 E
SANDY UT 84070-2418
MARK DOLAR
phone (801) 561-3121
account no. N 0225

FROM (former operator) CELSIUS ENERGY COMPANY
(address) 1331 17TH ST #800
DENVER CO 80202-1558
JANE SEILER
phone (303) 296-8945
account no. N 4850

Well(s) (attach additional page if needed): *CA M049P-84690C

Name: *WOODS COX 33-23/ISMY	API: 43-037-30811	Entity: 2730	Sec 23	Twp 37S	Rng 23E	Lease Type: U41499
Name: *MANTEL FED 23-1/ISMY	API: 43-037-31564	Entity: 11188	Sec 23	Twp 37S	Rng 23E	Lease Type: U46825
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

Lec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Rec'd 8-17-95)

Lec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Req. 8-17-95) (Rec'd 8-17-95)

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

Lec 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (8-17-95)

Lwp 6. Cardex file has been updated for each well listed above. 8-17-95

Lwp 7. Well file labels have been updated for each well listed above. 8-17-95

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (8-17-95)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

– OVER –

OPERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only)

N/A/Lc 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

___ 2. A copy of this form has been placed in the new and former operators' bond files.

___ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
OCS 5/18/95

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases.**

FILMING

✓ 1. All attachments to this form have been microfilmed. Date: August 24th 1995.

FILING

___ 1. Copies of all attachments to this form have been filed in each well file.

___ 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

950803 Blm/SL Aprv. eff. 8-1-95.

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

RECEIVED
OCT 13 1995

5. LEASE DESIGNATION AND SERIAL NO.: U-46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME: NA

2. NAME OF OPERATOR: CELSIUS ENEGY COMPANY

8. FARM OR LEASE NAME: MANTEL FEDERAL

3. ADDRESS OF OPERATOR: 1331-17th Street, Suite 300, Denver, CO. 80202 (303) 672-6970

9. WELL NO.: 23-1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2488' FNL; 2098' FWL SE/4 NW/4

10. FIELD AND POOL, OR WILDCAT: DEADMAN CANYON

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SEC. 23 T37S-R23E

14. PERMIT NO.: 43-037-31564

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5,777' GR

12. COUNTY OR PARISH: SAN JUAN

13. STATE: UTAH

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) CHANGE OF OPERATOR			☒
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

CELSIUS ENERGY COMPANY HAS SOLD THE MANTEL FEDERAL #23-1 WELLBORE TO:

D. J. SIMMONS, INC.
P. O. BOX 1469
FARMINGTON, NEW MEXICO 87499

THE CHANGE OF OPERATOR IS EFFECTIVE AUGUST 1, 1995.

lc

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE COORDINATOR, ADMINISTRATION DATE OCTOBER 11, 1995

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER: U 46825
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT or CA AGREEMENT NAME: MO49P- 84690C
1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER
8. WELL NAME and NUMBER: Mantel Federal 23-1
2. NAME OF OPERATOR: DJ Simmons Company Limited Partnership N2520
9. API NUMBER: 4303731564
3. ADDRESS OF OPERATOR: P.O. Box 1469 CITY Farmington STATE NM ZIP 87499
PHONE NUMBER: (505) 326-3753
10. FIELD AND POOL, OR WILDCAT: Deadman Canyon
4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2488 FNL x 2098 FWL
COUNTY: San Juan
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 23 37S 23E
STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective July 1, 2005, DJ Simmons Inc. will be the operator of the above described well.

Current Operator:

DJ Simmons Company Limited Partnership N0225
P.O Box 1469
Farmington, NM 87499

Name: Jeff Parkes
Signature:
Title: V.P.
Date: July 29, 2005

New Operator:

D J Simmons, Inc. UTB000048
1009 Ridgeway Pl. Suite 200
Farmington, NM 87401

Name: Jeff Parkes
Signature:
Title: V.P.
Date: July 29,2005

NAME (PLEASE PRINT) Jeff Parkes TITLE V.P
SIGNATURE DATE 7/29/2005

(This space for State use only)

APPROVED 8/15/05
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

RECEIVED
AUG 0 1 2005
DIV. OF OIL, GAS & MINING

(5/2000)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW
3. FILE

Change of Operator (Well Sold) — Designation of Agent/Operator

X Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **7/1/2005**

FROM: (Old Operator):	**TO:** (New Operator):
N0225-DJ Simmons Company LP PO Box 1469 Farmington, NM 87499 Phone: 1-(505) 326-3753	N2520-DJ Simmons Inc 1009 Ridgeway Pl. Suite 200 Farmington, NM 87401 Phone: 1-(505) 326-3753

CA No. **Unit:**

WELL(S)

NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
WOODS COX 33-23	23	370S	230E	4303730811	2730	Federal	GW	TA
MANTEL FED 23-1	23	370S	230E	4303731564	11188	Federal	GW	S
FEDERAL 34-32	34	370S	230E	4303730825	541	Federal	GW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 8/1/2005
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 8/1/2005
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 8/15/2005
4. Is the new operator registered in the State of Utah: YES Business Number: 1231074-0143
5. If **NO**, the operator was contacted contacted on:

6a. (R649-9-2)Waste Management Plan has been received on: IN PLACE

6b. Inspections of LA PA state/fee well sites complete on: n/a

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: not yet

8. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: n/a

9. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: not yet

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 8/15/2005
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 8/15/2005
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: n/a
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: UTB000048

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: n/a

FEE & STATE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a

2. The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET (for state use only)

ROUTING
1. DJJ
2. CDW

X - Change of Operator (Well Sold) Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **3/31/2010**

FROM: (Old Operator):	**TO:** (New Operator):
N2520-D J Simmons, Inc. 1009 Ridgeway Place, Suite 200 Farmington, NM 87401 Phone: 1 (505) 326-3753	N2292-Lodestone Operating, Inc. 403 4th Street Portland, TX 78374 Phone: 1 (361) 877-7077

CA No. **Unit:**

WELL NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
STATE 1-2	02	350S	230E	4303730699	17255	State	OW	OPS
WOODS COX 33-23	23	370S	230E	4303730811	2730	Federal	GW	TA
MANTEL FED 23-1	23	370S	230E	4303731564	11188	Federal	GW	S

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/20/2010
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 5/6/2010
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 3/24/2010
4a. Is the new operator registered in the State of Utah: Business Number: 6279346-0143
5a. (R649-9-2)Waste Management Plan has been received on: IN PLACE
5b. Inspections of LA PA state/fee well sites complete on: n/a
5c. Reports current for Production/Disposition & Sundries on: ok
6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM BIA
7. **Federal and Indian Units:**
   The BLM or BIA has approved the successor of unit operator for wells listed on: n/a
8. **Federal and Indian Communization Agreements ("CA"):**
   The BLM or BIA has approved the operator for all wells listed within a CA on: 6/30/2010
9. **Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 6/30/2010
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/30/2010
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: n/a
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: UTB000263
2. Indian well(s) covered by Bond Number: n/a
3a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number RLB0013326
3b. The **FORMER** operator has requested a release of liability from their bond on: n/a

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER: U-46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT or CA AGREEMENT NAME: MO49P-84690C

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER

8. WELL NAME and NUMBER: Mantel Federal 23-1

2. NAME OF OPERATOR: LODESTONE OPERATING, INC.

9. API NUMBER: 4303731564

3. ADDRESS OF OPERATOR: 403 4th Street CITY Portland STATE TX ZIP 78374

PHONE NUMBER: (361) 877-7077

10. FIELD AND POOL, OR WILDCAT: Deadman Canyon

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 2488' FNL & 2098' FWL

COUNTY: San Juan

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 23 37S 23E S

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS Clearly show all pertinent details including dates, depths, volumes, etc.

Effective March 31, 2010 Lodestone Operating, Inc. is now the operator for the above mentioned well.

BLM BOND # UTB000263

NAME (PLEASE PRINT) David Reavis TITLE Pres.

SIGNATURE [signature] DATE 3/31/10

(This space for State use only)

APPROVED 4/30/2010

Earlene Russell

Division of Oil, Gas and Mining

Earlene Russell, Engineering Technician

RECEIVED

MAY 06 2010

DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

API Well No: 43037315640000

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-46825

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL
Gas Well

8. WELL NAME and NUMBER: MANTEL FED 23-1

2. NAME OF OPERATOR:
D J SIMMONS, INC N1525

9. API NUMBER: 43037315640000

3. ADDRESS OF OPERATOR:
1009 RIDGEWAY PL, STE 200 , FARMINGTON, NM, 87401

PHONE NUMBER: 505 326-3753 Ext

9. FIELD and POOL or WILDCAT: DEAD MAN CANYON

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2390 FNL 2410 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SENW Section: 23 Township: 37.0S Range: 23.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 4/1/2010	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	✓ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective April 1, 2010 DJ Simmons, Inc. is no longer Operator of the Mantel Federal 23-1 Well. The new Operator is Lodestone Operating, Inc., 403 4th Street, Portland, TX 78374.

APPROVED 6/30/2010
Carlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Steve Sacks	505 326-3753	Permit Specialist
SIGNATURE		**DATE**
N/A		4/30/2010

RECEIVED April 30, 2010

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
http://www.blm.gov/ut/st/en.html

TAKE PRIDE IN AMERICA

IN REPLY REFER TO
3105
UT-922

June 30, 2010

Lodestone Operating, Inc.
272 Beachwalk Ln.
Port Aransas, TX 78373

Re: Successor of Operator
Communitization Agreement (CA)
MO49P-84690C
San Juan County, Utah

Gentlemen:

We received an indenture dated March 1, 2010, whereby D. J. Simmons Company, LP resigned as Operator and Lodestone Operating, Inc. was designated as Operator for CA MO49P-84690C, San Juan County, Utah.

The instrument is hereby approved effective June 30, 2010. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under CA MO49P-84690C.

Your statewide oil and gas bond, BLM No. UTB000263 will be used to cover all Federal operations within the CA.

Please advise all interested parties of the change in operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Roger L. Bankert

Roger L. Bankert
Chief, Branch of Minerals

Enclosure

bcc: UDOGM
FOM - Moab (w/enclosure)
CA file - MO49P-84690C (w/enclosure)
Fluids - Mickey
Agr. Sec. Chron
Reading File
Central Files

RECEIVED
JUL 0 6 2010

LWilcken:lw:6/30/10

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-46825

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: MANTEL FED 23-1

2. NAME OF OPERATOR: LODESTONE OPERATING, INC

9. API NUMBER: 43037315640000

3. ADDRESS OF OPERATOR: 272 Beachwalk Ln , Port Aransas, TX, 78373

PHONE NUMBER: 361 877-7077 Ext

9. FIELD and POOL or WILDCAT: DEAD MAN CANYON

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2390 FNL 2410 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 23 Township: 37.0S Range: 23.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
✓ SUBSEQUENT REPORT Date of Work Completion: 3/14/2011	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: Determine DH status

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Please see attached report.

Accepted by the Utah Division of Oil, Gas and Mining

FOR RECORD ONLY

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Polly Reavis	361 877-5950	Office Manager
SIGNATURE N/A		**DATE** 3/24/2011

RECEIVED Mar. 24, 2011

The following reports cover operations on the Mantel Federal 23-1 for the week of March 14 through March 20, 2011.

Initial Workover objective – determine downhole status of wellbore and evaluate potential of previously producing Ismay zone.

3/16/11 TP = 10 psi, CP = puff of gas.

Move in Red Rock Well Service double drum, double-triple workover rig. Unbolt flowline and tree, all very tight. Unlock tbg hgr. Rig up rig, set rig pump and tank. Finish rigging up to pull tubing in AM. SWIFN.

3/17/11 TP = 0, CP = 0

Pick up on tbg – tbg free. Strip on 3000 psi BOP'. POOH with tubing. On jt 73, 2352', began getting bad scale on pipe. Fairly obvious hole in casing. Continue pulling pipe with scale. Cleared up about 10 jts off btm. Pulled a total of 192 jts, tally 6,078.5'. Apparent fluid level at 1000' +/-. Make up re-run bit and 3-7/8" dia string mill with cut-rite as scraper. GIH, tagged scale at 2659' with bit and scraper. Close pipe rams and make up TIW valve on tbg. SDFN.

3/18/11 TP = 0, CP = 0

Continue in hole – tagged out at 6033', 45' above perfs. Truck in and unload produced water. Rig up pump and reverse circ. well, took 13 bbls to load. Work pipe down slowly to 15' above perfs, no more progress. Lost about 5 bbls fluid. Unload and rig up power swivel, prep to drill Mon. AM. Close pipe rams and make up TIW valve on tbg. SDFN.

3/19-20/11 SD for weekend.

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